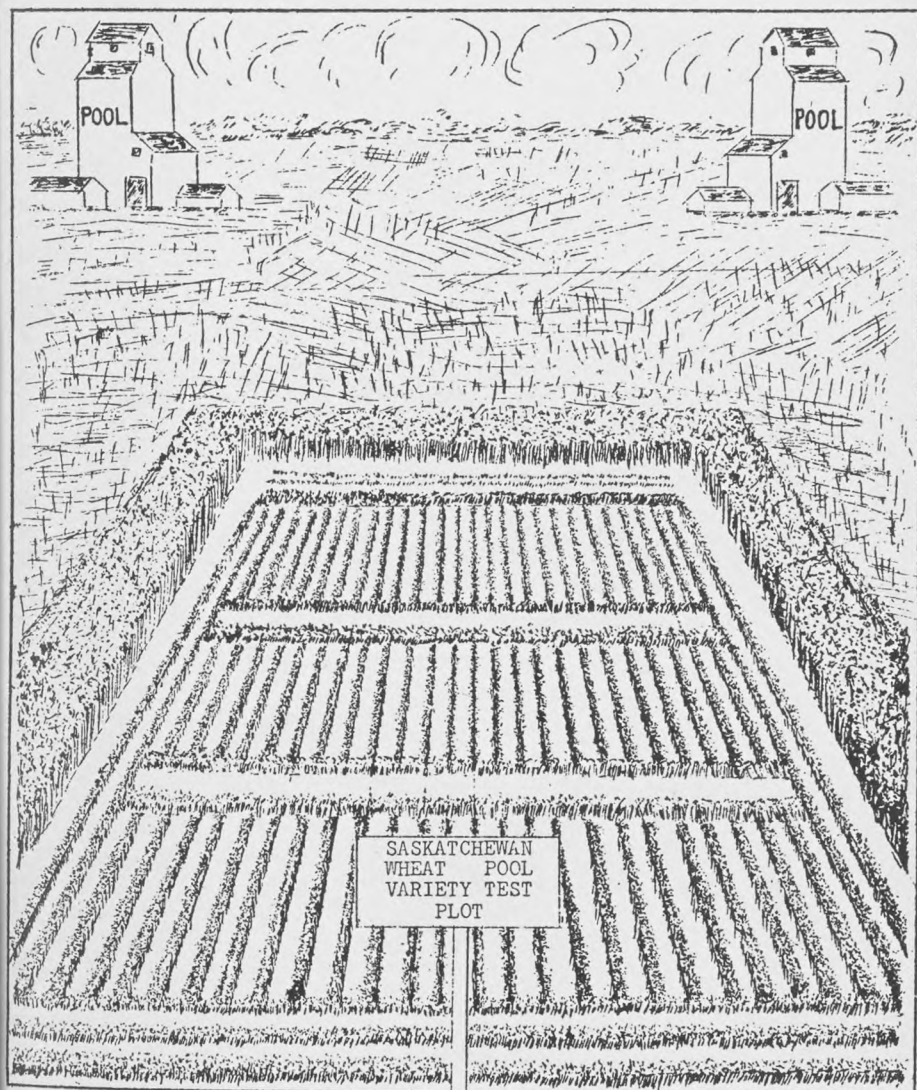


SASKATCHEWAN WHEAT POOL

Wheat Varieties in Saskatchewan Junior Co-operative Tests 1937



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SASKATCHEWAN CO-OPERATIVE WHEAT PRODUCERS LIMITED
April, 1938

FOREWORD

By the President of Saskatchewan Co-operative
Wheat Producers Limited

FOR the past three years the Saskatchewan Wheat Pool, in co-operation with the University of Saskatchewan and the Dominion Experimental Farms and Stations, has sponsored province-wide variety testing projects with barley and wheat.

The data embodied in this booklet represent the results of the 1937 testing programme.

Severe climatic conditions during the growing season took a heavy toll of the tests in many areas, but a study of the analysis will reveal that considerable worthwhile information was obtained.

Including, as it did, the two new Canadian rust-resisting wheat varieties, Apex and Renown, the project this year was of particular interest. Covering the entire grain growing area of Saskatchewan it again demonstrated the practicability of securing in a rapid manner exhaustive and accurate comparative data in connection with new varieties, thus securing valuable information for those engaged in scientific research and assisting our farmers in their choice of a variety most adaptable to that part of the province in which it is to be grown.

The successful operation of these extensive comparative variety tests could not be accomplished without the whole-hearted assistance of our Junior Co-operators. To all those boys and girls who have rendered this assistance we again voice our sincere appreciation.

J. H. WESSON.

INTRODUCTION

IN the progress of Canadian Agriculture there is a no more striking story than the development of the hard red spring wheat industry with all its attendant branches, its country and terminal elevators, transportation facilities, mills and bakeshops. Springing from a few seeds carefully saved from a single plant, the hard red spring wheat acreage of North America now reaches from Ontario across the Western Prairies to British Columbia, and oblivious of international borders, extends over large areas of the United States.

It was in 1842 that David Fife, of Peterboro, Ontario, preserved the seeds which were destined to make such a great contribution to the economic structure of the country, to change the rolling grasslands of the prairie into fertile wheat fields and to provide for the peoples of many parts of the world a sufficiency of food supplies.

Like so many discoveries which have proved of infinite benefit to mankind the presence of this lone wheat plant on Canadian soil was accidental. A small sample of wheat received by David Fife from a friend in Scotland was sown by him in the spring of the year but the sample was almost entirely winter wheat. Only a single plant reached maturity and proved to be a typical spring wheat variety.

The seeds of this one plant became the progenitors of Red Fife which was extensively used in the early days of the settlement of the Canadian prairies. Red Fife later became a parent of Marquis, the development of which has long been recognized as an outstanding achievement, bringing as it did a hard spring wheat which matured considerably earlier than any hitherto known, and of such commercial value that even today it is recognized as a standard of quality in the fixing of commercial grades, and upon which comparisons with new varieties may be made.

From Marquis there has been developed many varieties of different characteristics. In fact, nearly all of our Western Canadian bread wheats, including several varieties which were developed in the United States, have Marquis as one of their parents.

While Marquis wheat has been recognized as a standard for over twenty years the development of earlier maturing and rust-resisting wheats has steadily progressed.



The most northerly Saskatchewan Wheat Pool Variety Test located at Four Corners, (S.E. $\frac{1}{4}$ 14-60-18-W3rd) and supervised by Robert C. Seymour.

The extensive use of a rust-resistant wheat with other characteristics equal or exceeding the standard varieties, especially in those areas which are subject to rust epidemics is, of course, of primary importance to the producers of Western Canada. Conditions of severe drought which have resulted in such disastrous crop failures, especially in Saskatchewan during the past two years, has more or less erased the memory of the destructive rust epidemic of 1935, nevertheless even in these dry years rust was apparent over considerable areas and only abnormally early maturity induced by drought prevented serious losses.

Although previously grown for two years in the United States, rust-resisting red spring wheat was first available to the farmers of Western Canada in the spring of 1936. The variety, known as "Thatcher," was produced at the Minnesota Experimental Station and involved a double crossing program, namely, the cross of Iumillo durum with Marquis, the cross of Marquis with Kanred and a double cross of the progeny of the original crosses.

The 1936 results indicated that in most areas Thatcher was equal or superior to both the standard and other varieties insofar as its yielding abilities were concerned. In some respects, however, it did not prove to be equal to other varieties, and before recommendations could be made for its extensive use it was apparent that further data should be secured covering its reaction to diseases other than rust, and its ability to withstand drought or other extreme climatic conditions.

With the development of Apex, produced at the University of Saskatchewan, and involving a composite crossing program between the varieties H.44-24 (a rust-resistant type), Marquis, Kanred and Iumillo; and Renown produced at the Dominion Rust Research Laboratory, Winnipeg, Manitoba, from a cross between Reward and H.44-24; two new rust-resistant varieties became available to the farmers of Western Canada. In order that early and reliable data might be obtained in connection with these two new varieties, the Saskatchewan Wheat Pool, in co-operation with the University of Saskatchewan and the Dominion Experimental Farms planned this province-wide variety testing project. It was hoped that the tests, covering as they do all sections of the grain growing areas of Saskatchewan, would provide valuable information not only in connection with the two new Canadian rust-resisting wheats, but also to supplement the data already obtained on Thatcher. Valuable information was also expected to be derived from the test in regard to the yielding capacities, disease resistance, and general agronomic qualities of the other varieties used in the experiment. Unfortunately the severe climatic conditions which prevailed over the whole of Saskatchewan during the growing season of 1937 resulted in a considerable number of the tests being totally destroyed early in the year. Other tests only reached a partial stage of development and, even in those areas where the different varieties reached maturity, drought and intense heat caused considerable havoc. It will, therefore, be readily understood that in giving consideration to the data recorded due regard must necessarily be given both to the extreme weather conditions which prevailed, and to the reactions of all varieties in comparison to their behaviour in a year of normal rainfall and average temperatures.

VARIETIES USED IN TESTS

Eight varieties were selected for the experiment, namely, Marquis, Reward, Thatcher, Apex, Renown, Ceres, Reliance and Garnet, but only six of these varieties were used in each test. Marquis, Reward, Thatcher, Apex and Renown were sown in all tests, the sixth variety being selected from Ceres, Reliance or Garnet, the selection being made according to the suitability of the variety for that part of the province in which it was to be sown.

LOCATIONS OF TESTS

For the purpose of administration the Saskatchewan Wheat Pool has divided the Province into sixteen districts. In turn each district is divided into ten sub-districts. With one exception, two, and sometimes three, tests were located in each sub-district and in this manner the project consisted of 337 tests and extended to all the grain growing areas of Saskatchewan.

DESCRIPTION OF TEST

In previous years the tests were sown in a "perfect" latin square. This year owing to the number of varieties to be tested a modified latin square was used. The size of the test was 41 ft. by 27 ft. which allowed for 18 plots of four rows each, twelve inches apart and also allowed for an outside protection of winter wheat. Sown around the test at a distance of about three feet from the outside row of winter wheat two or more drill widths of oats acted as a wind protection and sawfly trap. The whole

test was divided into three sections with a pathway two feet wide between each section. In each section each variety was represented by one plot of four rows ten feet long. The distribution of the plots of the different varieties was in the form of a "perfect" modified latin square. This arrangement provided that each variety be once only in each section and once only near the outside edge of the test.

The seeds were sown at a depth of $2\frac{1}{2}$ inches to 3 inches and every endeavour was made to have each Junior Co-operator place the kernels about $\frac{1}{3}$ of an inch to $\frac{2}{5}$ of an inch apart in a manner uniform for all varieties, discarding any surplus seed left in a package after the row had been sown.

ORGANIZATION AND CO-OPERATION

To ensure that the project would be carried out exactly in accordance with the prescribed plan carefully selected Junior Co-operators were appointed to act as test supervisors. Detailed information was forwarded to each Junior Co-operator of the method to be employed both in regard to the laying out of the test and also in regard to the manner in which it was to be sown. To further assist the supervisor a coloured plan of the test, showing the location of the different varieties was included in the instructions forwarded. The arrangement of the plots was similar in all tests.

To avoid any confusion or error in distinguishing and sowing the different varieties according to plan the necessary seed for the experiment was assembled in the Head Office of the Wheat Pool Organization in Regina, where careful preparation of the seed required by each co-operator was made.

Sufficient seed for each row (nine grams) was weighed and placed in envelopes marked 1-72 inclusive. The names of the different varieties were shown on each envelope. Thus the envelopes numbered 1-4 contained seed for the four rows of the first variety to be sown in section 1, envelopes 5-8 contained the four rows of the second variety to be sown in section 1, and so on down to the envelopes marked 69-72, which contained the variety to be sown last in section 3 of the test.

In addition to the seed, 72 numbered wooden stakes were sent to each co-operator, 36 large stakes and 36 small stakes. The large stakes were used for the inside rows of each plot, and the small stakes for the outside rows of each plot.

All Junior Co-operators were requested to furnish full reports covering the progress of the test three times during the season. The first report which was to be completed and sent in to Head Office by June 15th, requested information as to the date of seeding; soil type; cultural treatment; soil moisture depth; and the amount of rainfall from the time of seeding to June 10th. Details in regard to the dates of emergence of the different varieties; uniformity of stand; cutworm, wireworm and grasshopper damage; and also soil-drifting damage was requested in this report.

The second progress report was required to be completed and returned by July 15th. It asked for information in regard to the dates of heading; insect damage not noted on the first report; the percentage of heads affected with covered smut; the number of loose smutted heads; and information in regard to weed interference. A report in regard to the rainfall from June 10th was also required.

The final report was required to be sent in by September 1st and requested information regarding the average height of each row; straw strength; the date when most heads were ripe; the percentage of bird damage; the date of harvesting; and the percentage of stem rust.

On all three reports space was provided for any remarks which the co-operator might make upon subjects not specifically asked for in the instructions.

During the growing season the tests were inspected by Field Representatives of the Wheat Pool Organization and each Representative was provided with report forms which assisted him to check over the progress of the tests. These reports provided valuable independent verification of the co-operator's own report.

Prior to the harvesting of the tests further instructions were prepared and sent out to all test supervisors. In these instructions special attention was given to such points as the best time to harvest and how harvesting should be done. Particular care was requested of each co-operator in connection with the curing of the crop and in storing it until such time as it was ready to be handed over to the local Pool Elevator Agent for shipment.

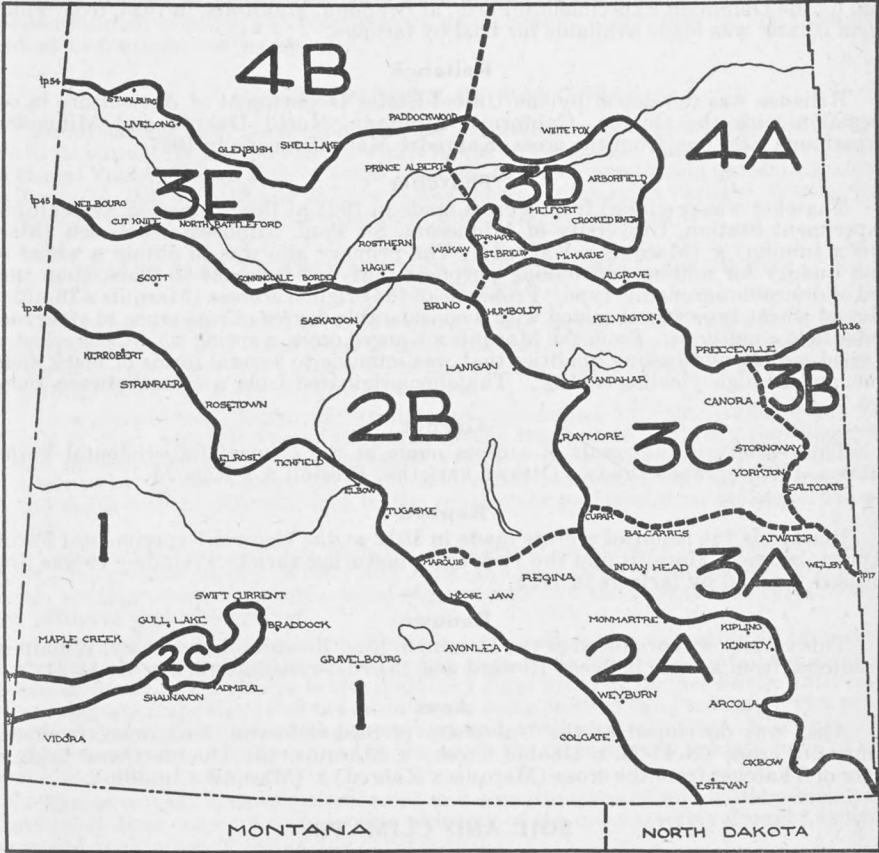
Arrangements were made with the Dominion Experimental Stations at Indian Head, Swift Current, Scott and Rosthern to thresh the grain. The local Pool Elevator Agent supplied the necessary wrapping paper and supervised the shipment. Care was taken to see that the two centre rows of each of the eighteen plots were parceled separately, together with the stakes identifying them. Only a small portion of the

straw was retained with the heads. After being thoroughly dried the eighteen bundles were placed in the required number of gunny sacks and shipped to the experimental station designated. Special shipping tags were sent to each Pool Agent to avoid any mistake in identifying the samples when they were received at the Experimental Station.

Each Experimental Station was provided with threshing report forms which enabled them to keep a record of the two centre rows of the eighteen plots. The information obtained following threshing gave grain yield in grams per plot; grain yield in bushels per acre and grain weight (uncleaned) in pounds per measured bushel. After threshing was completed the samples were sent in to the Head Office of the Saskatchewan Wheat Pool where they were graded, cleaned and again weighed giving the weight per bushel (cleaned). After all samples had been graded they were forwarded to Professor R. K. Larmour, University of Saskatchewan, to be tested for protein content.

The project was arranged and supervised by Dr. J. B. Harrington, Professor of Field Husbandry, University of Saskatchewan.

The compiling, summarizing and statistical work was carried out at the Head Office of the Saskatchewan Wheat Pool.



CEREAL VARIETY ZONES

ANALYSIS OF DATA

In order that a study may be made of the yielding capacity, disease resistance, and general characteristics of each variety grown in the tests under the different soil and climatic conditions of Saskatchewan, all data in connection with the tests were analysed in areas represented by the Cereal Variety Zones already mentioned and illustrated on page 7.

VARIETIES USED IN THE TESTS

Marquis

Marquis is a descendant of a cross made in 1892 by officials of the Central Experimental Farm, Ottawa, Ont., between an early ripening wheat, obtained from India under the name of Hard Red Calcutta, and Red Fife. It was isolated in 1903 by the late Sir Charles E. Saunders, then Dominion Cerealists, and was first sent to Western Canada for trial on branch farms in 1907.

Ceres

This variety originated from a cross between Kota and Marquis, made at the North Dakota Experimental Station, in 1918. It was introduced into Canada for trial by the Dominion Experimental Farm, at Brandon, Manitoba, in 1924, from which Farm it later was made available for trial by farmers.

Reliance

Reliance was developed by the United States Department of Agriculture in co-operation with the Oregon, California, Montana, North Dakota and Minnesota Experiment Stations, from the cross, Kanred x Marquis, made in 1917.

Thatcher

Thatcher was produced from a cross made in 1921 at the Minnesota Agricultural Experiment Station, University of Minnesota, St. Paul, Minnesota, between (Marquis x Iumillo) x (Marquis x Kanred). The primary aim was to obtain a wheat of high quality for milling and baking purposes that was resistant to black stem rust and of desirable agronomic type. From one of the original crosses (Marquis x Iumillo) a bread wheat type was obtained with a considerable degree of resistance to stem rust under field conditions. From the Marquis x Kanred cross, a spring wheat was selected of good milling and baking qualities that was immune to several forms of black stem rust, and of high yielding ability. Thatcher originated from a cross between these two.

Garnet

This variety is the result of a cross made at the Central Experimental Farm, Ottawa, 1905, between the two Ottawa varieties, Preston A x Riga M.

Reward

Reward is the result of a cross made in 1912 at the Central Experimental Farm, Ottawa, between Marquis and the very early maturing variety Prelude. It was first released for trial by farmers in 1928.

Renown

This variety was produced at the Dominion Rust Research Laboratory, Winnipeg, Manitoba, from a cross between Reward and the rust-resistant variety H. 44-24.

Apex

Apex was developed at the University of Saskatchewan, Saskatoon, from the composite cross (H.44-24 x Double Cross) x Marquis, the Double Cross being a sister of Thatcher from the cross (Marquis x Kanred) x (Marquis x Iumillo).

SOIL AND CLIMATE

Wide differences occur in the soils of Saskatchewan. The Department of Soils, University of Saskatchewan, has divided the Province into four major zones. These zones correspond closely to the regions of natural vegetation which in turn are related to the broad climatic differences which exist in the different regions. The Soil Zone map has generally been accepted as the basis for the different cereal variety zones, the cereal zone boundaries following closely those of the soil zones. In some cases, however, the soil zones have been divided; this has been necessary owing to differences in precipitation, summer temperatures and the length of the frost free season. The

Cereal Variety Zones are illustrated on page 7, and in the Guide to Saskatchewan Agriculture are described as follows:

Zone 1.—Brown soils; the short grass prairie region.

Zone 2.—Dark brown soils; the intermediate prairie region. Section A has a higher summer temperature, more precipitation, and a slightly longer season than Section B. Section C is cooler, has a shorter frost-free season, and has more precipitation than Section B.

Zone 3.—Black soils; the tall grass park region. Section A has a higher summer temperature, higher precipitation, and slightly longer season than Section C. Section B is characterized principally by a deeper, darker soil, and a shorter frost-free season than that of C. Section E, compared with D, is distinctly drier with more favorable harvest weather, and the soil is lighter and shallower.

Zone 4.—Grey soils; wooded region. Section A is more subject to stem rust than Section B.

While definite zones make necessary the exact location of boundary lines, it should be pointed out that a line separating two zones is arbitrary, and that a tolerance of several miles one way or another is allowable with respect to variety recommendations. In addition, attention is drawn to the fact that in each zone there are many local areas which differ widely from the average for the zone. Some of these areas have light sandy soil, others have heavy wet soil, some are at a higher elevation than the surrounding country, and receive extra precipitation, others may be low-lying and subject to frequent early frosts.

DISTRIBUTION OF VARIETIES

As we have already stated the sixth variety used in each test was selected according to its suitability for the area in which it was to be sown. These areas were based on Cereal Variety Zones, thus in Zones 1 and 2C Reliance constituted the sixth variety. In Zones 2A, 2B, 3A, 3B, and 3C, Ceres was chosen as the sixth variety. Garnet was selected as the sixth variety to be sown in Zones 3D, 3E, 4A and 4B.

RAINFALL, TEMPERATURES AND GENERAL GROWING CONDITIONS

Following a long period of severe drought the spring of 1937 brought a serious moisture deficiency over large areas of Saskatchewan. The deficiency was particularly severe in the southern and western areas and in these regions many of the tests failed to germinate owing to the dryness of the soil.

In a general way, some slight relief was experienced by rains which fell in the middle of May, but the precipitation was totally inadequate to satisfy requirements. While in the northern areas some good rainfalls were received, and precipitation of a somewhat lighter nature fell in the centre and south-east, only light showers fell in the south-central districts, and in the south-west practically no moisture was received.

Considerable soil drifting occurred throughout practically the whole Province during the greater portion of May and June, and over large areas, particularly in the south, south-western and west-central regions, much of the growth was continuously cut off level with the ground.

The month of June commenced with many co-operators, especially in the south-central and south-western areas, reporting that their tests were totally destroyed. A succession of hot dry days in the middle of June wrought further havoc until rains of varying amounts alleviated the situation in some parts of the Province. The precipitation was most abundant in the eastern and north-central areas. Elsewhere the moisture was quite insufficient and in the south the rains arrived too late to be of any material benefit to the tests.

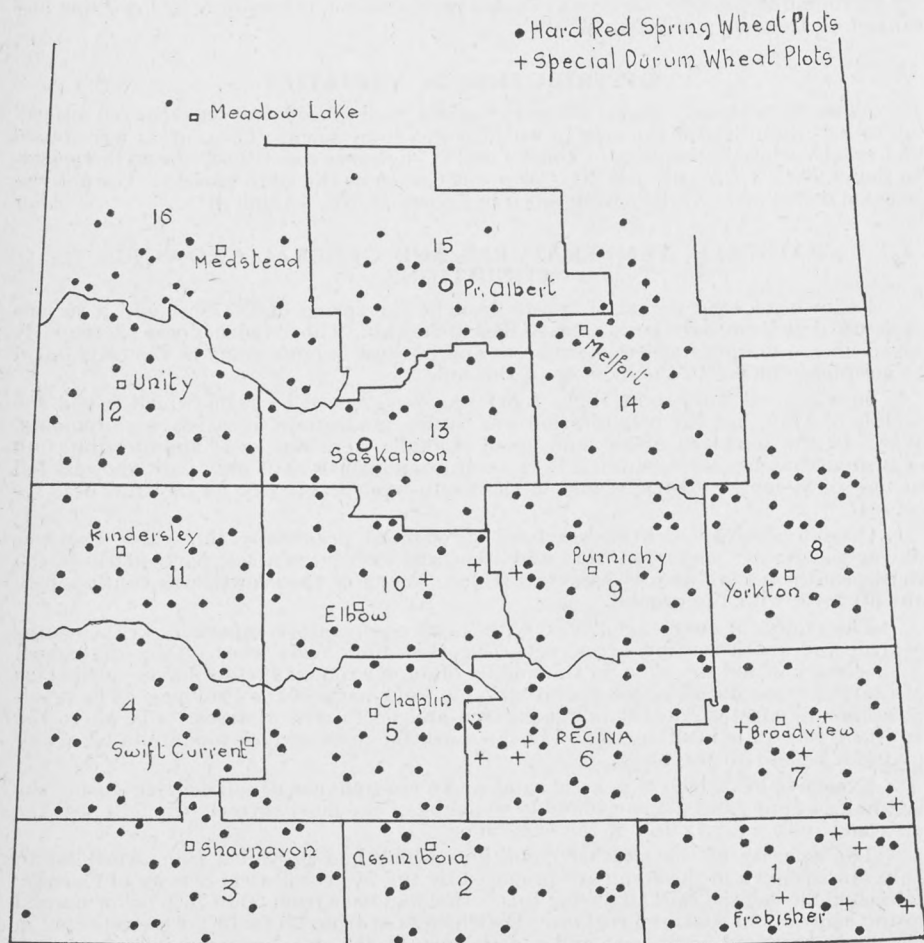
Excessive heat, lack of general rains and a continuance of soil drifting during the last half of June caused a considerable widening of the most severely drought stricken area and took a heavy toll of the experiment.

The severity of the weather conditions which had prevailed from April 1st to July 5th is shown in the summary prepared by the Meteorological Service of Canada. In Saskatchewan the rainfall during this period had been from 50 to 75% below normal in the central and southern regions. Deficiencies of from 20 to 45% were reported in the south-east and north-east and a deficiency of 45% was reported in the extreme north-west. Over large areas of the Province the excess from normal temperatures during this period was from 3 to 7 degrees.

Scorching temperatures continued during the early part of July. About the middle of the month, however, rains of varying amounts fell over many areas. The majority of the moisture was received in a portion of the territory most severely stricken by drought but extensive regions of the drought area received practically no precipitation. Even in those areas where good rains were received, particularly in the south-central portion of the Province (Pool District 2, which reported the heaviest precipitation of an average of nearly 3") the moisture was of little value insofar as the tests were concerned as many of them had already been totally destroyed.

During the early growing season pests were only a minor factor in the destruction of the tests. While grasshoppers were present in many areas no damage of a serious nature occurred until the early part of July. At this time, however, untold millions of these destructive pests appeared in the southern and east-central areas. Practically all tests in the southern portion of the Province had already been totally destroyed by severe drought and excessive heat but in the extreme south-east and east-central regions and at other points in the central areas many of the tests were either completely destroyed or severely damaged by these destructive insects. Sawflies also caused serious losses in a number of areas, particularly in the central regions.

As already stated, temperatures during the growing season of 1937 were far in excess of normal. In the early part of June, many points scattered throughout the Province reported over 100 degrees. In the first week of July, meteorological reports



Map—Showing Location of Tests.

again show over 100 degrees in most areas, with the highest temperatures showing in the south and western territories. At this time, Yellowgrass reported a temperature of 114° which marked an all time high for Canada.

As the amount of rainfall during the growing season has a far greater influence upon wheat yields than the amount of the annual precipitation the rainfall shown in Table No. 1 covers only the months representing the growing period of wheat in Saskatchewan, during 1937 (April to July). The table is arranged in Cereal Variety Zones and shows the number of points reporting in each zone, the average rainfall for each month and the amount of the heaviest precipitation in each month.

TABLE 1—Average total precipitation and average heaviest precipitation for months of April, May, June and July, 1937, in Saskatchewan Cereal Variety Zones with number of points reporting in each zone.

	No. of Points Reporting	Average Total Precipitation				Average Heaviest Precipitation			
		April	May	June	July	April	May	June	July
Cereal Variety Zone 1.....	19	.41	.90	.81	2.10	.32	.52	.38	1.26
Cereal Variety Zone 2A.....	7	.50	.86	.90	1.69	.23	.33	.69	.69
Cereal Variety Zone 2B.....	18	.36	1.61	.47	1.83	.18	.57	.27	.95
Cereal Variety Zone 2C.....	1	.19	.93	.49	.98	.08	.36	.15	.51
Cereal Variety Zone 3A.....	4	.80	.89	1.57	1.38	.31	.32	1.30	.58
Cereal Variety Zone 3B.....	1	.48	2.60	.62	1.44	.40	.56	.40	.46
Cereal Variety Zone 3C.....	4	.58	1.36	1.87	1.84	.28	.39	1.14	1.08
Cereal Variety Zone 3D.....	4	1.18	1.59	2.16	1.35	.40	.89	1.50	.90
Cereal Variety Zone 3E.....	8	1.09	1.41	.97	3.68	.54	.55	.50	1.77
Cereal Variety Zone 4A.....	1	.33	2.31	1.84	1.51	.40	1.04	.82	.47
Cereal Variety Zone 4B.....	1	.95	2.06	.60	3.40	*	1.28	*	*

* No report.

Note.—Precipitation figures are obtained from meteorological reports furnished by the Provincial Government and cover only those points shown in the reports. No information covering the average precipitation throughout each cereal zone is available.

GRAIN YIELD

A study of the contents of Table No. 2 will show that with one exception Thatcher outyielded all other varieties in all cereal variety zones. The exception is in Zone No. 1. In this zone Reliance constituted the sixth variety and excelled Thatcher in yield per bushel by 1.1 bushels. In this area both Marquis and Apex were practically equal to Thatcher in yielding ability. Renown was the lowest yielding variety but only a difference of .2 bushel appeared between Renown and Reward.

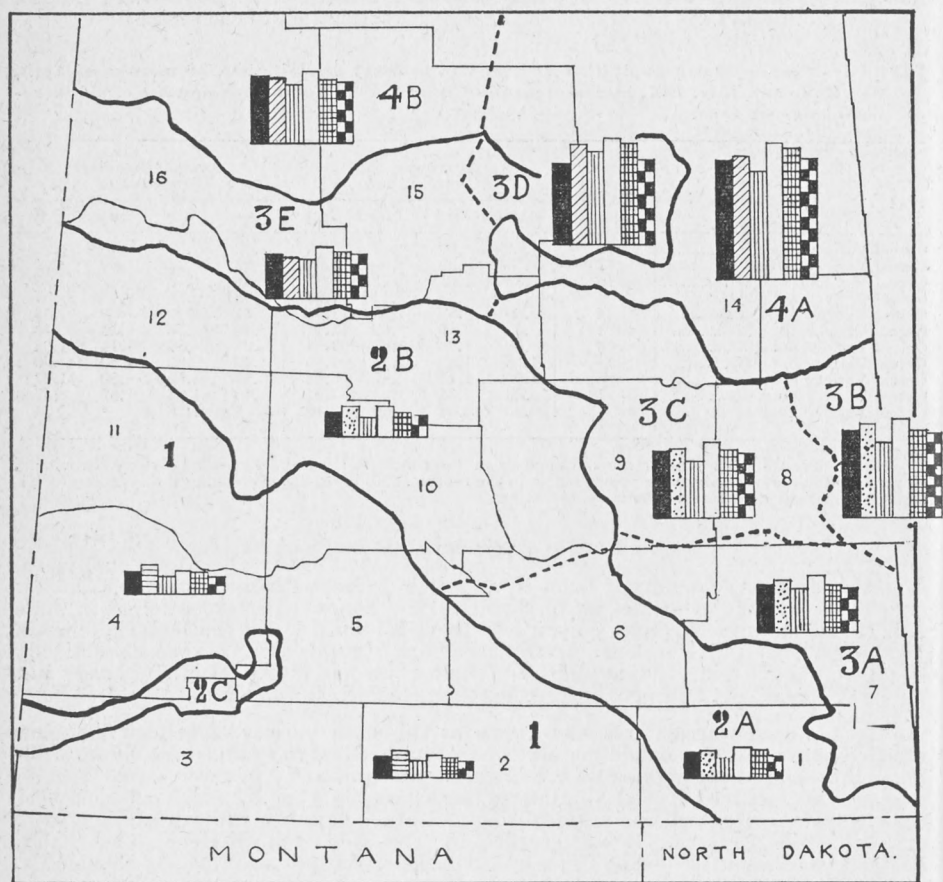
In the area where Ceres was grown as the sixth variety, generally Thatcher excelled with an average yield per acre of 13.7 bushels. Ceres ranked second in yielding ability being 1 bushel less than Thatcher. Marquis and Apex were equal with an average yield per bushel of 11.8. Both of these varieties were .7 bushel higher in yield than Renown. Reward was outyielded by all other varieties with an average yield of 9.9 bushels per acre. It was excelled by Thatcher by a difference 3.8 bushels. Reward was also outyielded by Ceres by 2.8 bushels, Marquis and Apex by 1.9 bushels, and Renown by 1.3 bushels.

In the northern regions of the Province where Garnet was grown as the sixth variety in the tests, Thatcher again outyielded all other varieties with an average yield of 19.5 bushels per acre. Apex was its nearest competitor with a difference of 1.1 bushels. Garnet ranked third in yielding ability with an average yield per acre of 17.1 bushels. Marquis and Renown were equal, showing 2.9 bushels less than Thatcher, 1.8 bushels less than Apex and .5 bushel less than Garnet. Reward was again outyielded by all other varieties. Thatcher exceeded this variety by a difference of 3.8 bushels, Apex by 2.7 bushels, Garnet by 1.4 bushels and Marquis and Renown by .9 bushel per acre.

A general comparison between the varieties which were sown in all tests showed Thatcher excelled all other varieties with an average yield of 15 bushels per acre. Apex was its nearest competitor with 13.4 bushels followed by Marquis with an average yield of 12.8 bushels. Renown ranked fourth in this comparison with an average yield of 12.4 bushels per acre. Reward showed the lowest yield with 11.4 bushels per acre. A comparison between Ceres, Reliance and Garnet with other varieties grown in identical areas has already been given. No comparison can be made between Ceres, Reliance and Garnet as these varieties were not tested under equal conditions.

HISTOGRAMS SHOWING YIELDS

The histograms shown below give a comparison of yields in bushels per acre of the different varieties grown in each Cereal Variety Zone.



LEGEND

MARQUIS



REWARD



CERES



THATCHER



RELIANCE



APEX



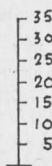
GARNET



RENOWN



Scale in
Bushels



Cereal Variety
Zones

Wheat Pool
Districts.

**TABLE 2—AVERAGE YIELD IN BUSHELS PER ACRE SUMMARIZED
IN CEREAL VARIETY ZONES.**

Cereal Variety Zone	Marquis	Reward	Thatcher	Apex	Renown	Reliance	Ceres	Garnet
1.....	5.0	3.9	5.1	4.8	3.7	6.2	....	....
2A.....	6.5	5.6	6.9	6.8	5.5	....	6.8	....
2B.....	6.1	4.6	7.3	6.1	5.3	....	6.8	....
2C.....	....	....	....	....	....	....	....	....
3A.....	11.2	10.3	13.5	11.2	11.0	....	12.7	....
3B.....	20.5	17.6	23.1	20.5	20.2	....	22.0	....
3C.....	16.1	13.3	18.4	16.1	15.3	....	16.8	....
3D.....	20.0	22.3	25.3	23.9	20.8	....	....	23.7
3E.....	10.7	9.1	12.4	11.5	10.8	....	....	9.6
4A.....	29.0	26.0	33.0	31.8	29.0	....	....	30.1
4B.....	16.3	14.0	17.0	15.3	14.3	....	....	16.0

Note.—As Reliance, Ceres and Garnet were not grown in all Cereal Variety Zones, comparisons can only be made with the other varieties when sown in similar zones and under identical conditions.

**TABLE 3—AVERAGE, YIELDS PERCENTAGE OF MARQUIS BY
CEREAL VARIETY ZONES**

Cereal Variety Zone	Marquis	Reward	Thatcher	Apex	Renown	Reliance	Ceres	Garnet
1.....	100.0	101.0	120.7	112.4	92.8	140.2	....	....
2A.....	100.0	101.6	121.5	121.1	96.0	....	120.1	....
2B.....	100.0	88.6	134.0	110.3	103.3	....	140.4	....
2C.....	....	....	....	....	....	....	....	....
3A.....	100.0	109.5	133.0	113.6	107.4	....	133.1	....
3B.....	100.0	90.2	116.7	103.4	108.6	....	122.7	....
3C.....	100.0	85.7	119.3	99.8	96.9	....	111.2	....
3D.....	100.0	100.4	112.9	104.5	93.8	....	....	107.9
3E.....	100.0	92.1	123.6	111.5	109.3	....	....	89.9
4A.....	100.0	94.6	116.0	109.2	100.7	....	....	112.3
4B.....	100.0	92.8	126.0	93.5	98.1	....	....	98.6

DAYS FROM SOWING TO RIPENING

In Table No. 4 is shown the average number of days taken by each variety from sowing to ripening in the different Cereal Variety Zones. While the effect of the dry hot weather is reflected in the maturity period in all zones the shortness of the growing season is not so marked as in 1936. Particular attention is drawn to the wide variation which occurs between the maturity periods in Zone 1 (the southwest) and Zone 4B, which constitutes Saskatchewan's most northerly grain growing area. Comparatively few tests are available in either of these zones for the purpose of studying the maturity periods but a comparison of the five varieties which were sown in both zones reveals a difference of some twenty days, all varieties in the Northern area showing considerably shorter maturity periods than in the southwest.

In studying these results the abnormal weather conditions which prevailed during the growing season must, of course, be taken into consideration. In the southern areas, particularly in the southwest, sowing dates were exceedingly early but lack of moisture caused all varieties to lie dormant in the ground for a considerable time. Showers in some areas eventually assisted in promoting germination and fairly heavy rains in July enabled the tests to reach maturity. In the extreme northern area (Zone 4B) only two tests are available for analysis purposes insofar as maturity periods are concerned. In these tests conditions are reversed. The dates of sowing are generally a week to ten days later than Zone 1. A fairly good seed bed promoted early emergence and showers and hot weather forced all varieties to early maturity.

Over the entire project Marquis ripened in an average of 97.5 days, Apex in 96.4 days, Renown 95.1 days, Thatcher in 95 days and Reward in 93.3 days. A comparison of these varieties which were grown in all tests indicates that Marquis was 4.2 days later than Reward, 2.5 days later than Thatcher and Renown, and slightly more than 1 day later than Apex. Reward was approximately 2.7 days earlier than Thatcher and Renown, and slightly more than three days earlier than Apex. Thatcher and Renown were almost equal but both varieties were approximately 1.4 days earlier than Apex.

Generally the average number of days from seeding to maturity of the Ceres, Reliance and Garnet varieties were, Ceres 95.7 days, Reliance (Zone 1) 109 days, Garnet 87.9 days, but no comparison can be made between these varieties as they were not sown in similar tests or under identical conditions.

In Zone 1, where, as we have already stated, all varieties showed considerably more days from the date of sowing to ripening, Reliance constituted the sixth variety and required 109 days to reach maturity. Apex was only slightly earlier, Marquis matured one day earlier than Reliance, Thatcher and Renown were almost equal and were both approximately $1\frac{1}{2}$ days earlier than Marquis. Reward was the earliest variety, being 7 days earlier than Reliance, nearly 7 days earlier than Apex, 6 days earlier than Marquis and $4\frac{1}{2}$ days earlier than Renown.

In the area where Ceres was the sixth variety it is found that generally Ceres was nearly two days earlier than Marquis and one day earlier than Apex. Little difference is seen between the maturity periods of Ceres, Thatcher and Renown, Thatcher being slightly earlier and Renown slightly later. Reward was 3.4 days earlier than Marquis, $2\frac{1}{2}$ days earlier than Apex, slightly more than $1\frac{1}{2}$ days earlier than Renown, $1\frac{1}{2}$ days earlier than Ceres and more than 1 day earlier than Thatcher.

In the northern area where Garnet was the sixth variety a general comparison shows that the Garnet variety was earlier than all others, having matured nearly 2 days earlier than Reward, slightly more than $3\frac{1}{2}$ days earlier than Thatcher and Renown, $5\frac{1}{2}$ days earlier than Apex and 7 days earlier than Marquis.

TABLE 4—AVERAGE NUMBER OF DAYS FROM SOWING TO RIPENING SUMMARIZED IN CEREAL VARIETY ZONES

Cereal Variety Zone	Marquis	Reward	Thatcher	Apex	Renown	Reliance	Ceres	Garnet
1.....	108.0	102.0	106.4	108.8	106.5	109.0	....	....
2A.....	97.0	93.7	94.7	95.2	94.3	....	94.8	....
2B.....	99.8	96.5	97.4	98.8	98.3	....	97.6	....
2C.....	....	....	....	....	....	....	....	....
3A.....	97.7	95.2	95.8	97.2	96.5	....	96.4	....
3B.....	95.9	91.5	93.1	95.2	94.0	....	94.0	....
3C.....	96.1	92.4	94.6	94.9	93.9	....	93.9	....
3D.....	95.7	90.8	92.6	92.8	92.2	....	....	88.0
3E.....	94.7	90.5	92.6	95.1	91.7	....	....	89.5
4A.....	96.1	89.2	90.0	93.1	92.5	....	....	85.7
4B.....	88.5	82.0	86.5	88.0	86.0	....	....	83.5

HEIGHT OF PLANTS

In Table No. 5 the height in inches of each variety is shown by Cereal Variety Zones. The severe climatic conditions which prevailed in 1937 is fully reflected in the variation which occurs in the different zones. A general comparison between the varieties which were grown in all tests showed Marquis to be the tallest variety although it exceeded Renown by only .3 inch. Reward and Thatcher are equal in height but .5 inch shorter than Marquis and .2 inch shorter than Renown. Apex showed less height than any of the other varieties being one inch shorter than Marquis; .7 inch shorter than Renown and .5 inch shorter than Reward and Thatcher.

No comparison is made between the heights of Ceres, Reliance and Garnet as these varieties were not grown under identical conditions.

In Zone 1, which suffered most severely from drought conditions, Marquis, Thatcher and Apex tied in being the tallest varieties. Reliance, however, was only slightly shorter and was again followed closely by Renown. Reward was the shortest variety being .7 inch shorter than Marquis, Thatcher and Apex, .6 inch shorter than Reliance and slightly shorter than Renown.

It will be observed that differences occurred between the heights of varieties in the different zones constituting the area where Ceres was sown. A general comparison,

TABLE 5—AVERAGE PLANT HEIGHT IN INCHES SUMMARIZED IN CEREAL VARIETY ZONES

Cereal Variety Zone	Marquis	Reward	Thatcher	Apex	Renown	Reliance	Ceres	Garnet
1.....	12.6	11.9	12.6	12.6	12.1	12.5	....	....
2A.....	15.6	15.8	15.9	14.6	16.1	....	17.3	....
2B.....	15.6	13.9	14.5	14.5	14.5	....	14.7	....
2C.....	....	....	....	....	....	....	....	....
3A.....	21.1	21.5	21.6	20.8	21.5	....	22.0	....
3B.....	24.8	24.2	24.6	23.2	24.2	....	24.9	....
3C.....	25.1	25.6	24.7	23.7	24.7	....	25.1	....
3D.....	28.0	27.4	27.0	26.8	28.3	....	....	27.7
3E.....	20.2	20.3	19.0	19.3	20.7	....	....	20.3
4A.....	31.3	30.8	30.1	29.7	30.1	....	....	30.9
4B.....	21.7	20.7	21.7	21.0	21.7	....	....	21.0

however, of the varieties sown in this territory shows that Ceres exceeded all other varieties in height but only slight differences appear between this variety and Marquis, Reward, Thatcher, and Renown. Apex, however, was approximately 1 inch shorter than any other variety.

In the regions where Garnet was grown as the sixth variety in the tests, a general comparison shows that Marquis excelled all other varieties in height. It was closely followed, however, by Garnet, Reward and Renown. Thatcher and Apex were both exceeded in height by approximately one inch by all other varieties.

STRAW STRENGTH

Straw strength was reported on a basis of 10-0; 10 being recorded if the plants were straight and erect. If the plants tended to lean slightly or were slightly curved at the base the straw strength would be shown as 9. The greater the lean, the greater proportion of leaning plants, the lower the figure shown until if the plants were flat upon the ground they would receive 0 for straw strength.

Table No. 6 shows the strength of the straw of the different varieties in each Cereal Variety Zone based on the marking 10-0 as mentioned above.

TABLE 6—COMPARISON OF STRAW STRENGTH SUMMARIZED IN
CEREAL VARIETY ZONES
Basis 0-10

Cereal Variety Zone	Marquis	Reward	Thatcher	Apex	Renown	Reliance	Ceres	Garnet
1.....	9.0	8.4	8.8	8.7	9.0	8.8	....	....
2A.....	9.1	8.6	8.9	8.8	8.8	....	8.9	....
2B.....	8.8	8.4	8.7	8.7	8.6	....	8.2	....
2C.....	....	....	....	....	....	....	....	....
3A.....	8.9	8.3	8.9	8.9	8.7	....	8.6	....
3B.....	9.2	8.6	8.8	8.5	8.6	....	9.2	....
3C.....	9.2	8.9	9.1	9.1	8.9	....	8.7	....
3D.....	9.1	9.1	9.2	8.9	8.8	....	....	9.0
3E.....	9.5	9.0	9.4	9.4	9.3	....	....	8.9
4A.....	9.6	9.7	9.7	9.7	9.7	....	....	9.5
4B.....	9.5	9.4	9.7	9.7	9.3	....	....	9.4

From this table it will be observed that relatively little variation occurred in the comparative strengths of the varieties in the different zones. Oddly enough straw weakness was apparent only in the areas where moisture was particularly lacking. A general comparison between those varieties which were sown in all tests indicates that Marquis was superior to the other varieties in the strength of straw. Only very slight differences, however, are shown in any of the varieties, Marquis being followed in sequence by Thatcher, Apex, Renown and Reward.

In Zone 1 where Reliance was grown as the sixth variety Marquis and Renown were both equal in straw strength and exceeded all other varieties. Reliance and Thatcher were also equal and slightly weaker than Marquis and Renown. Apex ranked fifth while Reward showed the weakest straw.

Ceres constituted the sixth variety in Zones 2A, 2B, 3A, 3B and 3C. While differences occurred between the different varieties in the individual zones a general comparison of the varieties grown in this area shows that Marquis again excelled in straw strength. Slight differences appeared in all varieties, Marquis heading the list followed by Thatcher, Apex, Renown and Ceres. Reward again showed inferiority to all other varieties.

In the area where Garnet was grown as the sixth variety a general comparison shows Marquis and Thatcher were equal and showed stronger straw than the other varieties. Apex, however, was but slightly weaker. Reward and Renown were equal, being slightly weaker than Apex. Garnet showed the weakest straw. On the whole none of these differences are very significant.

No comparison is made between Ceres, Reliance and Garnet as these varieties were not sown in similar areas or under identical conditions.

WEIGHT PER MEASURED BUSHEL

Table No. 7 shows the average weight per bushel (cleaned) of each variety arranged in cereal variety zones. From this table it will be observed that despite the severeness of the season all varieties showed surprisingly good weights.

A general comparison of the varieties which were grown in all tests shows that Reward exceeded all varieties in bushel weight. Marquis followed with a difference of .8 pound, Apex and Renown were nearly equal, Renown being only .2 lb. heavier. These two varieties were approximately 1.3 lbs. less than Reward and .5 lb. less than Marquis. Thatcher showed the lowest bushel weight. It was 2.1 lbs. lighter in weight than Reward, 1.3 lbs. lighter than Marquis and approximately .8 lb. lighter than Apex and Renown.

No comparison is made between Ceres, Reliance and Garnet as these varieties were not grown in similar tests or under the same conditions.

In the area which comprises Zone 1, where Reliance was grown as the sixth variety in the tests, Reliance excelled in bushel weight, being .4 lb. heavier than Reward, its nearest competitor. Marquis was 1.1 lbs. lighter in weight than Reliance and .7 lb. lighter than Reward. Only slight differences are shown in Apex, Renown and Thatcher. Renown showed 1.5 lbs. less weight than Reliance, 1.1 lbs. less than Reward and .4 lb. less than Marquis. It exceeded the Apex and Thatcher varieties, however, by .1 lb. and .3 lb. respectively. Thatcher showed the lowest bushel weight being .3 lb. lighter than Renown.

In the territory where Ceres was the sixth variety in the tests a general comparison shows that Reward exceeded all other varieties in weight per measured bushel. Ceres and Marquis were approximately 1 lb. lighter than Reward, Renown ranked fourth being 1.3 lbs. lighter in weight than Reward, .4 lb. lighter than Marquis and .3 lb. lighter than Ceres. Apex weighed 1.7 lbs. less than Reward, .8 lb. less than Marquis, .7 lb. less than Ceres and .4 lb. less than Renown. Thatcher showed the lowest weight per bushel. This variety weighed 2.3 lbs. less than Reward, 1.4 lbs. less than Marquis, 1.3 lbs. less than Ceres, 1 lb. less than Renown and .6 lb. less than Apex.

A general comparison of the weights of the different varieties in the area where Garnet was grown shows that Reward again excelled while Marquis still appeared as its nearest competitor with a difference of .7 lb. Renown followed being .9 lb. less than Reward and .2 lb. less than Marquis. Apex was only slightly lower in bushel weight than Renown, the difference being .1 lb. Thatcher was outweighed by all other varieties except Garnet. This variety showed weights of 1.8 lbs. less than Reward, 1.1 lbs. less than Marquis, .9 lb. less than Renown and .8 lb. less than Apex. It exceeded Garnet, however, by .5 lb.

TABLE 7—BUSHEL WEIGHT IN POUNDS (CLEANED) BY CEREAL VARIETY ZONES

Cereal Variety Zone	Marquis	Reward	Thatcher	Apex	Renown	Reliance	Ceres	Garnet
1.....	63.1	63.8	62.4	62.6	62.7	64.2	....	....
2A.....	63.3	64.7	62.3	62.3	63.3	....	63.0	....
2B.....	63.1	63.6	61.4	62.5	62.5	....	62.6	....
2C.....	....	....	....	....	....	....	....	....
3A.....	62.0	63.3	61.1	60.8	61.7	....	62.1	....
3B.....	63.6	64.8	62.8	63.5	63.9	....	64.0	....
3C.....	63.6	64.3	61.7	62.7	62.9	....	63.4	....
3D.....	63.9	64.9	62.9	63.6	63.4	....	....	62.2
3E.....	63.3	63.4	62.1	63.1	63.2	....	....	61.4
4A.....	64.4	65.7	63.9	64.1	64.5	....	....	63.8
4B.....	64.7	66.0	63.3	64.0	64.7	....	....	63.3

In Table No. 8 is shown the percentage of commercial grades of each variety arranged in Cereal Variety Zones.

From this table it will be observed that generally all varieties graded well although in many instances a superabundance of green kernels resulted in grade losses. Very uneven germination which resulted in uneven growth and the fact that in many areas the grain was cut while still green to prevent serious grasshopper damage are the reasons for the prevalence of an unusual number of green kernels in all varieties.

In Table No. 9 the percentage of commercial grades by varieties is shown.

TABLE 8—PERCENTAGE OF COMMERCIAL GRADES BY CEREAL VARIETY ZONES

Cereal Variety Zone	% 1 Hd.	% 1 Nor.	% 2 Nor.	% 3 Nor.	% 4 Nor.	% No. 5	% Rej. 2 Nor.	% Rej. 3 Nor.
1.....Marquis.....	50	40	10	....	....	....	....	....
.....Reliance.....	40	50	....	10	....	....	....	....
.....Reward.....	44	44	....	12	....	....	....	....
.....Thatcher.....	40	40	20	....	....	....	....	....
.....Apex.....	50	40	10	....	....	....	....	....
.....Renown.....	40	50	10	....	....	....	....	....
2A.....Marquis.....	37	50	....	13	....	....	....	....
.....Ceres.....	25	62	....	13	....	....	....	....
.....Reward.....	37	50	....	13	....	....	....	....
.....Thatcher.....	12	75	....	13	....	....	....	....
.....Apex.....	12	75	....	13	....	....	....	....
.....Renown.....	12	75	....	13	....	....	....	....
2B.....Marquis.....	14	50	25	7	4	....	....	....
.....Ceres.....	11	44	37	8	....	....	....	....
.....Reward.....	11	50	28	11	....	....	....	....
.....Thatcher.....	8	46	32	14	....	....	....	....
.....Apex.....	14	46	28	12	....	....	....	....
.....Renown.....	4	54	35	7	....	....	....	....
3A.....Marquis.....	6	44	37	13	....	....	....	....
.....Ceres.....	6	57	37	....	....	....	....	....
.....Reward.....	12	50	38	....	....	....	....	....
.....Thatcher.....	....	56	25	19	....	....	....	....
.....Apex.....	....	50	37	13	....	....	....	....
.....Renown.....	6	56	32	6	....	....	....	....
3B.....Marquis.....	60	20	20	....	....	....	....	....
.....Ceres.....	50	30	20	....	....	....	....	....
.....Reward.....	60	20	20	....	....	....	....	....
.....Thatcher.....	40	40	10	10	....	....	....	....
.....Apex.....	50	30	20	....	....	....	....	....
.....Renown.....	50	30	10	10	....	....	....	....
3C.....Marquis.....	23	38	31	4	4	....	....	....
.....Ceres.....	12	52	24	12	....	....	....	....
.....Reward.....	11	54	11	15	9	....	....	....
.....Thatcher.....	8	42	27	15	8	....	....	....
.....Apex.....	23	39	23	11	4	....	....	....
.....Renown.....	16	50	19	11	4	....	....	....
3D.....Marquis.....	58	25	17	....	....	....	....	....
.....Garnet.....	77 (1 C.W.)	16 (2 C.W.)	....	....	7	....	....	....
.....Reward.....	31	54	15	....	....	....	....	....
.....Thatcher.....	46	31	8	15	....	....	....	....
.....Apex.....	46	38	16	....	....	....	....	....
.....Renown.....	38	38	24	....	....	....	....	....
3E.....Marquis.....	4	39	26	17	5	9	....	....
.....Garnet.....	46 (1 C.W.)..	29 (2 C.W.)	....	12	9	4	....	....
.....Reward.....	4	50	29	9	4	4	....	....
.....Thatcher.....	4	29	38	17	4	8	....	....
.....Apex.....	4	38	29	21	....	8	....	....
.....Renown.....	4	38	29	21	....	8	....	....
4A.....Marquis.....	14	44	14	14	....	....	....	14
.....Garnet.....	86 (1 C.W.)	14 (2 C.W.)	....	....	....	....	....	....
.....Reward.....	43	43	14	....	....	....	....	....
.....Thatcher.....	28	44	....	14	....	....	14	....
.....Apex.....	29	29	14	14	....	....	14	....
.....Renown.....	28	44	....	14	....	....	14	....
4B.....Marquis.....	....	....	67	33	....	....	....	....
.....Garnet.....	....	33 (2 C.W.)	....	67	....	....	....	....
.....Reward.....	....	....	100	....	....	....	....	....
.....Thatcher.....	....	....	67	33	....	....	....	....
.....Apex.....	....	....	67	33	....	....	....	....
.....Renown.....	....	....	33	67	....	....	....	....

TABLE 9—PERCENTAGE OF COMMERCIAL GRADES BY VARIETIES

	% 1 Hard	% 1 Nor.	% 2 Nor.	% 3 Nor.	% 4 Nor.	% No. 5	% Rej. 2°	% Rej. 3°
Marquis.....	24	39	25	8	2	1	....	1
Reward.....	20	47	22	8	2	1	....	....
Thatcher.....	15	42	24	15	2	1	1	....
Apex.....	21	41	24	11	1	1	1	....
Renown.....	16	47	23	11	1	1	1	....
Reliance.....	40	50	....	10	....	....	....	....
Ceres.....	16	49	28	7	....	....	....	....
Garnet.....	57 (1 C.W.)	23 (2 C.W.)	....	11	7	2	....	....

SUMMARIZATION

ACCORDING TO CEREAL VARIETY ZONES **

In order that comparisons may be made of each important characteristic of the different varieties when grown under similar soil and climatic conditions the data shown below are prepared on the basis of cereal variety zones.

Cereal Variety Zone 1

The results for Zone 1 are summarized in Table No. 10. Conditions of severe drought and excessive heat resulted in almost complete crop failures throughout the wide area covered by this Cereal Variety Zone. Although 101 tests were sown only eleven reached maturity and were harvested. The yields of all varieties were exceedingly low and the abnormal weather conditions which prevailed during the growing season were fully reflected by the relatively long maturity periods of all varieties. While sowing dates were exceedingly early in this Zone an almost complete lack of moisture caused the seed to lie dormant for a considerable time and an unusual number of days from sowing to emergence was shown in all tests. Reliance which was sown in all tests as the sixth variety took 109 days to mature and excelled in yield having outyielded all other varieties by significant differences. It also excelled in bushel weight. In straw strength and commercial grades it was also shown to be reasonably satisfactory. No significant differences appear between the yields of Marquis, Thatcher and Apex. These three varieties were equal in height. Marquis, however, had the stronger straw and better weight, it also tied with Apex in showing the highest commercial grades. Reward and Renown were shorter and were outyielded by all other varieties by significant differences. Renown tied with Marquis in straw strength and was superior in this characteristic to the other varieties. Reward excelled all varieties with the exception of Reliance in bushel weight; The abnormal climatic conditions which prevailed throughout this Zone resulting in the loss of a large percentage of the tests makes it inadvisable to stress the superiority or inferiority of any of the varieties until data for a normal year are obtained. However, the excellent performance of Reliance and the poor performance of Renown appear to be worthy of consideration.

TABLE 10—SUMMARIZED RESULTS FOR ZONE 1

	Marquis	Reliance	Reward	Thatcher	Apex	Renown
Yield in bushels per acre.....	5.0	6.2	3.9	5.1	4.8	3.7
Height of plant in inches.....	12.6	12.5	11.9	12.6	12.6	12.1
Days from seeding to ripening.....	108	109	102	106.4	108.8	106.5
Straw strength.....	9	8.8	8.4	8.8	8.7	9
Bushel weight in pounds.....	63.1	64.2	63.8	62.4	62.6	62.7
Commercial grades in percentage—1 Hd.	50	40	44	40	50	40
1°	40	50	44	40	40	50
2°	10	....	....	20	10	10
3°	....	10	12	....	....	....

A difference of .65 bushels between the yields of two varieties is significant.

Cereal Variety Zone 2A

Summarized results for Zone 2A are given in Table No. 11. Severe drought conditions also prevailed in the area comprising this Zone and many of the tests were totally destroyed. Ceres was sown as the sixth variety in all tests. Although Thatcher led in yielding ability it was closely followed by Ceres and Apex, the difference in each case being only .1 bushel. Ceres excelled in height and outweighed both Thatcher and Apex. Marquis was also outyielded by Thatcher by only .4 bushel, but excelled in straw strength and equalled Reward in showing the best commercial grades. Reward and Renown were practically equal in yielding ability and were outyielded by all other varieties by significant differences. Reward, however, excelled in weight per bushel. Although it was exceeded in commercial grades by both Marquis and Reward, generally Ceres appears to have given the best performance in this Zone. It must be borne in mind, however, that while no rust infection was shown in any of the tests sown in Zone 2A this area is subject to rust epidemics and the superior resistance of other varieties would, in a year conducive to severe rust attacks, considerably outweigh the advantages which Ceres showed in these tests.

**Note: Soon after the completion of the analysis of the data contained in this booklet the boundaries of the Cereal Variety Zones were slightly changed. Cereal Variety Zone 1 has been divided into two sections 1A and 1B and Cereal Variety Zone 2B has also been divided into two sections 2B and 2D. These changes, however, are not considered to be of sufficient magnitude to warrant re-analysis of the data. The Cereal Variety map, which appears on page 7, shows the areas of the Cereal Variety Zone as used in this analysis.

TABLE 11—SUMMARIZED RESULTS FOR ZONE 2A

	Marquis	Ceres	Reward	Thatcher	Apex	Renown
Yield in bushels per acre.....	6.5	6.8	5.6	6.9	6.8	5.5
Height of plant in inches.....	15.6	17.3	15.8	15.9	14.6	16.1
Days from seeding to ripe.....	97.0	94.8	93.7	94.7	95.2	94.3
Straw strength.....	9.1	8.9	8.6	8.9	8.8	8.8
Bushel weight in pounds.....	63.3	63.0	64.7	62.3	62.3	63.3
Commercial grades in percentage—1 Hd.	37	25	37	12	12	12
1°	50	62	50	75	75	75
3°	13	13	13	13	13	13

A difference of .56 bushels between the yields of two varieties is significant.

Cereal Variety Zone 2B

The results for Zone 2B are given in Table No. 12. While drought conditions caused considerable havoc in this Zone, a fair proportion of the tests sown reached maturity and were harvested. Thatcher excelled in yield but was low in bushel weight. Ceres again ranked second in yielding ability, being .5 bushel lower than Thatcher, a difference that is barely significant. Ceres, however, was slightly taller than Thatcher, was 1 pound heavier and showed better commercial grades. Marquis and Apex were equal in yield, but Marquis excelled in height and straw strength and with the exception of Reward showed a better bushel weight than the other varieties. All varieties except Reward outyielded Renown by significant differences. Reward was decidedly lower in yield than the other varieties, but again excelled in bushel weight. While Thatcher exceeded the other varieties in yield this advantage was to some extent offset by its low bushel weight and relatively low commercial grades. Ceres made distinctly the best showing but its lack of high rust resistance is a handicap. Marquis and Apex appeared fairly equal in desirability and were generally considerably superior to Reward and Renown. In studying these results, however, the abnormal weather conditions which prevailed over this Zone must necessarily be taken into consideration.

TABLE 12—SUMMARIZED RESULTS FOR ZONE 2B

	Marquis	Ceres	Reward	Thatcher	Apex	Renown
Yields in bushels per acre.....	6.1	6.8	4.6	7.3	6.1	5.3
Height of plant in inches.....	15.6	14.7	13.9	14.5	14.5	14.5
Days from seeding to ripe.....	99.8	97.6	96.5	97.4	98.8	98.3
Straw strength.....	8.8	8.2	8.4	8.7	8.7	8.6
Bushel weight in pounds.....	63.1	62.6	63.6	61.4	62.5	62.5
Commercial grades in percentage—1 Hd.	14	11	11	8	14	4
1°	50	44	50	46	46	54
2°	25	37	28	32	28	35
3°	7	8	11	14	12	7
4°	4	....	....	....	....	....

A difference of .48 bushels between the yields of two varieties is significant.

Cereal Variety Zone 2C

The few tests sown in Cereal Zone 2C were totally destroyed.

Cereal Variety Zone 3A

Summarized results for Zone 3A are presented in Table No. 13. Most of the tests sown were harvested and fair yields are recorded. Ceres was grown as the sixth variety in the Zone. Thatcher exceeded all other varieties in yield, but here again the difference between Thatcher and Ceres is barely significant. In this Zone also Ceres slightly exceeded Thatcher in height, showed better bushel weight and commercial grades, but was somewhat weaker in straw. Marquis and Apex tied in yield, while Renown showed a yield only slightly less, but these varieties were all outyielded by Thatcher and Ceres by differences that are significant. Reward was low in yield but showed the best bushel weight and highest commercial grades, while Apex was shorter than the other varieties and was low in both weight and grades. Generally it would appear that under the conditions existing in 1937 Ceres was the best variety, but in this area which has in the past been subject to severe rust attacks the superior rust resistant qualities of Thatcher, Apex and Renown must be given serious consideration.

TABLE 13—SUMMARIZED RESULTS FOR ZONE 3A

	Marquis	Ceres	Reward	Thatcher	Apex	Renown
Yield in bushels per acre.....	11.2	12.7	10.3	13.5	11.2	11.0
Height of plant in inches.....	21.1	22.0	21.5	21.6	20.8	21.5
Days from seeding to ripe.....	97.7	96.4	95.2	95.8	97.2	96.5
Straw strength.....	8.9	8.6	8.3	8.9	8.9	8.7
Bushel weight in lbs.....	62.0	62.1	63.3	61.1	60.8	61.7
Commercial grades in percentage—1 Hd.	6	6	12	....	....	6
1°	44	57	50	56	50	56
2°	37	37	38	25	37	32
3°	13	....	....	19	13	6

A difference of .82 bushels between the yields of two varieties is significant.

Cereal Variety Zone 3B

The results for Cereal Zone 3B are shown in Table No. 14. This Zone represents a relatively small area in the east-centre of the Province adjacent to the Manitoba boundary where moisture conditions were far more favourable than in many other regions. The majority of the tests in this Zone reached maturity and some fair yields are recorded. Ceres was grown as the sixth variety in all tests. Thatcher again excelled in yield but was inferior to other varieties in bushel weight and commercial grades. The difference in the yields of Thatcher and Ceres is barely significant but Ceres slightly exceeded Thatcher in height, had stronger straw, better bushel weight and higher commercial grades. Both Thatcher and Ceres show significant differences in yields over all other varieties. Little difference appeared in the yields of Marquis, Apex and Renown, although all three varieties were outyielded by Thatcher and Ceres by differences that are significant. Reward was very inferior in yield to all other varieties but excelled in bushel weight and tied with Marquis in showing the highest commercial grades. Generally Ceres appeared to be the superior variety in most characteristics but the superior rust-resisting qualities of Thatcher, Apex and Renown must not be overlooked in the choice of a variety for this Zone which has in the past severely suffered from rust infection.

TABLE 14—SUMMARIZED RESULTS FOR ZONE 3B

	Marquis	Ceres	Reward	Thatcher	Apex	Renown
Yield in bushels per acre.....	20.5	22.0	17.6	23.1	20.5	20.2
Height of plant in inches.....	24.8	24.9	24.2	24.6	23.2	24.2
Days from seeding to ripe.....	95.9	94.0	91.5	93.1	95.2	94.0
Straw strength.....	9.2	9.2	8.6	8.8	8.5	8.6
Bushel weight in pounds.....	63.6	64.0	64.8	62.8	63.5	63.9
Commercial grades in percentage—1 Hd.	60	50	60	40	50	50
1°	20	30	20	40	30	30
2°	20	20	20	10	20	10
3°	....	....	....	10	....	10

A difference of 1.16 bushels between the yields of two varieties is significant.

Cereal Variety Zone 3C

Summarized results for Zone 3C appear in Table No. 15.

Fair yields are also shown in this Zone with Thatcher again leading the field, outyielding all other varieties by significant differences. It was however, exceeded by all other varieties in bushel weight and commercial grades. Ceres, which was grown as the sixth variety in the Zone, ranked second in yield, but was closely followed by Marquis and Apex by differences which are not significant. Apex excelled in commercial grades. Renown was outyielded by Marquis and Apex by only .8 bushel, a difference which is not significant, but both Ceres and Thatcher outyielded the Renown variety by significant differences. Reward again showed the lowest yield, being outyielded by all varieties by significant differences, but this variety again exceeded all other varieties in height and bushel weight. While Thatcher was somewhat lower than the other varieties in both bushel weight and commercial grades, the advantage which it enjoyed in yield together with its rust resisting qualities definitely showed its adaptability to this particular area. Apex and Renown although lower in yield and somewhat shorter in the straw have other characteristics which are superior to Thatcher and these together with their resistance to rust indicates their merits for use in this Zone.

TABLE 15—SUMMARIZED RESULTS FOR ZONE 3C

	Marquis	Ceres	Reward	Thatcher	Apex	Renown
Yield in bushels per acre.....	16.1	16.8	13.3	18.4	16.1	15.3
Height of plant in inches.....	25.1	25.1	25.6	24.7	23.7	24.7
Days from seeding to ripe.....	96.1	93.9	92.4	94.6	94.9	93.9
Straw strength.....	9.2	8.7	8.9	9.1	9.1	8.9
Bushel weight in pounds.....	63.6	63.4	64.3	61.7	62.7	62.9
Commercial grades in percentage—1 Hd.	23	12	11	8	23	16
1°	38	52	54	42	39	50
2°	31	24	11	27	23	19
3°	4	12	15	15	11	11
4°	4	....	9	8	4	4

A difference of 1.07 bushels between the yields of two varieties is significant.

Cereal Variety Zone 3D

Summarized results for Zone 3D are shown in Table No. 16. Moisture conditions were more favourable in this Zone and the yields of all varieties were relatively high. Garnet was sown as the sixth variety in the tests. Thatcher again led in yielding ability, but was fairly low in bushel weight and in commercial grades. The differences in yield between Thatcher, Apex and Garnet are shown to be barely significant, but Apex practically equalled Thatcher in height, and showed better weight and commercial grades. Reward was outyielded by Thatcher by a difference which is significant. It was also outyielded by Apex and Garnet but the differences are barely significant. Reward, however, outyielded both Marquis and Renown by significant differences and excelled all other varieties in bushel weight. Garnet showed the lowest bushel weight. Marquis was low in yield being slightly outyielded by Renown, but exceeded Renown in straw strength and was slightly higher in bushel weight. It also excelled all varieties in commercial grades. Generally Thatcher appeared to show the best performance in this Zone, but Apex and Reward both showed considerable merit. Garnet also appeared to advantage in a number of characteristics.

TABLE 16—SUMMARIZED RESULTS FOR ZONE 3D

	Marquis	Garnet	Reward	Thatcher	Apex	Renown
Yield in bushels per acre.....	20.0	23.7	22.3	25.3	23.9	20.8
Height of plant in inches.....	28.0	27.7	27.4	27.0	26.8	28.3
Days from seeding to ripe.....	95.7	88.0	90.8	92.6	92.8	92.2
Straw Strength.....	9.1	9.0	9.1	9.2	8.9	8.8
Bushel weight in pounds.....	63.9	62.2	64.9	62.9	63.6	63.4
Commercial grades in percentage—1 Hd.	58	....	31	46	46	38
1°	25	....	54	31	38	38
2°	17	....	15	8	16	24
3°	....	....	....	15	....	....
4°	....	7	....	....	....	....
1 C.W.	....	77	....	....	....	....
2 C.W.	....	16	....	....	....	....

A difference of 1.35 bushels between the yields of two varieties is significant.

Cereal Variety Zone 3E

Table No. 17 shows the results for Zone 3E.

Drought conditions prevailed throughout this Zone but considering the abnormal weather prevailing some fair yields are recorded. Garnet was grown as the sixth variety in the zone. Thatcher again surpassed the other varieties in yielding ability but it was closely followed by Apex by a difference which is barely significant. No differences of a significant nature appear between the yields of Marquis, Apex and Renown. The difference between the yields of Garnet and Reward are also not of a significant nature but these two varieties were outyielded by all others by significant differences. Reward showed the highest commercial grades and the highest bushel weight but with the exception of Garnet no great differences appeared in either weight or grades. Garnet was the earliest variety in the Zone but was only one day earlier than Reward and slightly more than two days earlier than Renown. Apex was the latest variety being slightly more than 5½ days later than Garnet and nearly five days later than Reward. Although somewhat lower in commercial grades and bushel weight than most of the other varieties the general performance of Thatcher would indicate its usefulness in this zone but the number of superior characteristics, particularly bushel weight and grades, of Marquis, Apex and Renown, are deserving of consideration.

TABLE 17—SUMMARIZED RESULTS FOR ZONE 3E

	Marquis	Garnet	Reward	Thatcher	Apex	Renown
Yield in bushels per acre.....	10.7	9.6	9.1	12.4	11.5	10.8
Height of plant in inches.....	20.2	20.3	20.3	19.0	19.3	20.7
Days from seeding to ripe.....	94.7	89.5	90.5	92.6	95.1	91.7
Straw strength.....	9.5	8.9	9.0	9.4	9.4	9.3
Bushel weight in pounds.....	63.3	61.4	63.4	62.1	63.1	63.2
Commercial grades in percentage—1 Hd.	4	....	4	4	4	4
1°	39	....	50	29	38	38
2°	26	....	29	38	29	29
3°	17	12	9	17	21	21
4°	5	9	4	4	....	....
No. 5	9	4	4	8	8	8
1 C.W.	....	46	....	....	....	....
2 C.W.	....	29	....	....	....	....

A difference of .82 bushels between the yields of two varieties is significant.

Cereal Variety Zone 4A

The results for Zone 4A appear in Table No. 18.

This Zone consists of an area in the north-eastern portion of the Province where moisture conditions were relatively most favourable, but comparatively few tests were located in this region. Garnet was sown as the sixth variety in the tests and all varieties show good yields. Thatcher excelled in yield with an average of 33 bushels per acre while its other characteristics were reasonably satisfactory. Apex was again second in yielding ability and no significant difference appears between the yield of this variety and Thatcher, but Apex slightly exceeded Thatcher in bushel weight and commercial grades. No difference of a significant nature appears between the yields of Apex and Garnet. Thatcher outyielded all varieties with the exception of Apex by significant differences and Apex also outyielded the other varieties, excepting Garnet, by differences which are significant. Reward was decidedly low in yield, having been outyielded by Thatcher by 7 bushels, a difference which is highly significant. It was also outyielded by all other varieties by significant differences but it again showed a very high bushel weight and excelled in weight and commercial grades. Garnet was the earliest variety, being nearly 10½ days earlier than Marquis, which showed the longest maturity period. Garnet, however, was lower than any of the other varieties in weight per measured bushel. A difference of less than one day appeared between the maturity dates of Reward and Thatcher while Apex and Renown were respectively approximately 3 and 2½ days later than the Thatcher variety. The high yield of Thatcher, its comparative earliness, straw strength, weight and commercial grades, emphasises its suitability for this portion of the Province. Apex, although slightly more than three days later than Thatcher showed somewhat higher bushel weight and commercial grades, and would appear at least to be one of the varieties suitable for this area. Renown was slightly more than 3½ days earlier than Marquis and tied in yielding ability but graded lower than the standard variety. Reward was inferior to all varieties in yield but its comparative earliness, high bushel weight and good commercial grades somewhat compensate for its low yield.

TABLE 18—SUMMARIZED RESULTS FOR ZONE 4A

	Marquis	Garnet	Reward	Thatcher	Apex	Renown
Yield in bushels per acre.....	29.0	30.1	26.0	33.0	31.8	29.0
Height of plant in inches.....	31.3	30.9	30.8	30.1	29.7	30.1
Days from seeding to ripe.....	96.1	85.7	89.2	90.0	93.1	92.5
Straw strength.....	9.6	9.5	9.7	9.7	9.7	9.7
Bushel weight in pounds.....	64.4	63.8	65.7	63.9	64.1	64.5
Commercial grades in percentage—1 Hd.	14	....	43	28	29	....
1°	44	....	43	44	29	28
2°	14	....	14	14	14	44
3°	14	....	....	....	14	14
Rej. 2°	....	....	....	14	14	14
Rej. 3°	14	....	....	....	....	....
1 C.W.	....	86	....	....	....	....
2 C.W.	....	14	....	....	....	....

A difference of 2.51 bushels between the yields of two varieties is significant.

Cereal Variety Zone 4B

Summarized results for Zone 4B are tabulated in Table No. 19.

This zone represents Saskatchewan's most northerly grain growing area. Garnet was grown as the sixth variety in the tests but only three tests are available for the purpose of analysis. Thatcher was again high in yielding ability with an average yield of 17 bushels per acre. A difference of only .7 bushel was shown between the yields of Thatcher and Marquis and although Marquis showed a somewhat better bushel weight, these varieties were equal in commercial grades. Garnet was slightly lower in yield than Marquis and three days earlier than Thatcher. Apex showed an average yield of 15.3 bushels per acre with reasonably good bushel weight and commercial grades but was only .5 day earlier than Marquis. Renown was two days earlier than Apex but was one bushel lower in yield and although slightly higher in bushel weight, was lower in commercial grades. Reward was inferior to all other varieties in yield being outyielded by Thatcher, Marquis and Garnet by 3 bus., 2.3 bus., and 2 bus. respectively. In this northern area, however, where earliness is such an important factor the short maturity period of this variety together with its extremely high bushel weight and excellent commercial grades, somewhat compensates for its inferior yielding ability.

TABLE 19—SUMMARIZED RESULTS FOR ZONE 4B

	Marquis	Garnet	Reward	Thatcher	Apex	Renown
Yield in bushels per acre.....	16.3	16.0	14.0	17.0	15.3	14.3
Height of plant in inches.....	21.7	21.0	20.7	21.7	21.0	21.7
Days from seeding to ripe.....	88.5	83.5	82.0	86.5	88.0	86.0
Straw strength.....	9.5	9.4	9.4	9.7	9.7	9.3
Bushel weight in pounds.....	64.7	63.3	66.0	63.3	64.0	64.7
Commercial grades in percentage—2°	67	...	100	67	67	33
3°	33	67	...	33	33	67
2 C.W.	...	33	...	...	...	...

Only three tests are available in this zone.

GENERAL SUMMARY OF VARIETAL PERFORMANCE

Varieties Listed in Alphabetical Order

Below is shown a comparison of the different varieties when sown under identical conditions. As Reliance, Ceres and Garnet were only sown in a portion of the project, these varieties have only been compared with other varieties when grown in similar tests. As Marquis, Thatcher, Reward, Apex and Renown were grown in all tests, comparison is made on their average performance over the entire project.

Apex.—Apex was grown in all tests and showed an average yield over the entire project of 13.4 bushels per acre. When compared to other varieties which were grown in all tests it was outyielded only by Thatcher by a difference of 1.6 bushels per acre. It exceeded Marquis by .6 bushel, Renown by 1 bushel and Reward by 2 bushels per acre. A comparison with Reliance, when sown in similar tests in Zone 1, shows that Apex was inferior in yielding ability to Reliance by a difference of 1.4 bushels per acre. When a comparison is made with Garnet when sown under identical conditions it is found that Apex outyielded the Garnet variety by 1.3 bushels but Ceres when grown in similar tests outyielded Apex by nearly one bushel per acre.

Over the entire project Apex averaged 96.4 days from sowing to ripening and when compared with other varieties sown in all tests it was exceeded only by Marquis in the number of days required to reach maturity, Marquis being $1\frac{1}{2}$ days later. Apex was later than the other varieties by the following differences: Reward 3.1 days; Thatcher 1.4 days; Renown 1.3 days. When compared to other varieties sown in similar tests Apex was shown to be slightly earlier than Reliance, 1 day later than Ceres, and 5.5 days later than Garnet. Apex was slightly weaker in straw than Marquis, Reliance and Thatcher but was somewhat stronger than all other varieties. In height Apex averaged 20.1 inches and proved to be shorter than the other varieties grown over the entire project by the following differences: Marquis 1 inch; Renown .7 inch; and Reward and Thatcher .5 inch. It was also shorter than Ceres and Garnet by differences of 1.2 inches and .9 inch respectively, but was slightly taller than Reliance. Throughout the whole project Apex averaged 62.6 lbs. per measured bushel, outweighing Thatcher by .7 lb. It also outweighed Garnet by 1.3 lbs. It was, however, exceeded in weight by all other varieties by the following differences: Marquis .6 lb.; Reward 1.4 lbs.; Renown .2 lb.; Ceres .7 lb.; and Reliance 1.6 lbs. The commercial grades of Apex are shown as follows: 1 Hard—21%; 1°—41%; 2°—24%; 3°—11%; 4°—1%; No. 5—1%; Rej. 2—1%. In those areas where rust was evident Apex proved to be highly resistant.

Ceres.—Ceres was the sixth variety grown in tests located in Cereal Variety Zones 2A, 2B, 3A, 3B and 3C. Ceres showed an average yield of 12.7 bushels per acre and with the exception of Thatcher outyielded all other varieties grown in similar tests and under identical conditions. Compared to Marquis grown in similar tests it outyielded the standard variety by .9 bushel. Ceres, averaging 95.7 days from sowing to ripening was $1\frac{1}{2}$ days later than Reward, and slightly later than Thatcher. It was, however, nearly two days earlier than Marquis, nearly 1 day earlier than Apex and slightly earlier than Renown. Ceres was taller than any of the other varieties sown in similar tests. It slightly exceeded Marquis and Thatcher and was taller than the other varieties by the following differences: Apex 1.2 inches, Reward .6 inch and Renown .5 inch. Although slightly exceeding Reward in strength of straw it was inferior in this characteristic to all other varieties and was much weaker than Marquis. In bushel weight it was exceeded by Reward by 1 lb. and by Marquis by .1 lb. It exceeded the Thatcher, Apex and Renown varieties by 1.3 lbs., .7 lb. and .3 lb. respectively. Ceres showed the following commercial grades: 1 Hd.—16%; 1°—49%; 2°—28%; 3°—7%. Ceres was more affected by both covered and loose smut than any of the other varieties. In this test Ceres was much less susceptible to stem rust than Marquis but slightly more susceptible than Reward. It showed, however, a considerably larger percentage of infection than Thatcher, Apex or Renown.

Garnet.—Garnet represented the sixth variety in the northern portion of Saskatchewan's grain-growing area. (Zones 3D, 3E, 4A and 4B). This variety produced an average yield of 17.1 bushels per acre. It was exceeded in yield by both the Thatcher and Apex varieties when grown under similar conditions by 2.4 bushels and 1.3 bushels respectively. It, however, outyielded both Marquis and Renown by .5 bushel and also exceeded Reward by 1.4 bushels per acre.

With an average maturity period of 87.9 days it was nearly two days earlier than Reward, slightly more than $3\frac{1}{2}$ days earlier than Thatcher and Renown, $5\frac{1}{2}$ days

earlier than Apex and 7 days earlier than Marquis. It was weaker in straw than any of the other varieties. The average height of Garnet was 24.7 inches. It was slightly exceeded by Marquis and Renown but was a little taller than Thatcher and Apex. Garnet and Reward were almost equal in height. With an average of 61.7 lbs. Garnet was inferior to all other varieties in bushel weight. It weighed 1.6 lbs. less than Marquis, 2.3 lbs. less than Reward, .5 lb. less than Thatcher, 1.3 lbs. less than Apex and 1.4 lbs. less than Renown. This variety graded as follows: 1 C.W.—57%; 2 C.W.—23%; 3°—11%; 4°—7%; and No. 5—2%. Compared to other varieties grown in similar tests Garnet appeared in so far as this project is concerned, somewhat more susceptible to rust infection than Marquis, and much more susceptible than the other varieties.

Marquis.—This variety was grown in all tests and yielded from 5 bushels per acre in Zone 1 to 29 bushels per acre on Zone 4A. Over the whole project an average yield of 12.8 bushels was shown. A comparison of Marquis with the other varieties which were grown in all tests shows that the standard variety exceeded both Reward and Renown in yield by differences of 1.4 bushels and .4 bushel respectively, but it was outyielded by Thatcher and Apex by 2.2 bushels and .6 bushel respectively. When compared to Reliance, which was the sixth variety in Zone 1, Marquis was exceeded in yield by 1.2 bushels. In the area where Ceres was the sixth variety, Ceres exceeded it by .9 bushel and in the area where Garnet constituted the sixth variety in the tests, Garnet outyielded Marquis by .5 bushel. The average maturity period required by Marquis over the whole project was 97.5 days, and it was later than the other varieties which were sown in all tests by the following differences: Reward 4.2 days, Thatcher 2.5 days, Apex 1.1 days, Renown 2.4 days. In Zone 1 it was one day earlier than Reliance but a comparison with Ceres sown in similar tests shows that Marquis was 1.9 days later than this variety and when compared to Garnet sown in identical tests it was 7 days later. Generally over the whole project Marquis excelled in straw strength although the superiority of other varieties was evident in the northern areas where moisture was more prevalent. Marquis averaged 21.1 inches in height over the entire test. It slightly exceeded Renown, was 1 inch taller than Apex and .5 inch taller than Reward and Thatcher. It slightly exceeded Ceres in height and was .4 inch taller than Garnet. A comparison with Reliance, however, shows Marquis to have been practically equal in height to this variety. Throughout the entire project Marquis averaged 63.2 lbs. per measured bushel and outweighed all varieties with the exception of Reward and Reliance. These two varieties exceeded Marquis in bushel weight by .8 lb. and 1.1 lbs. respectively. Marquis, however, slightly exceeded Ceres and outweighed all other varieties by the following differences: Thatcher 1.3 lbs., Apex .6 lb., Renown .4 lb., and Garnet 1.6 lbs. The commercial grades were shown as 1 Hard—24%; 1°—39%; 2°—25%; 3°—8%; 4°—2%; No. 5—1% and Rej. 3—1%. In the area where rust infection was evident Marquis appeared to be generally more susceptible than any of the other varieties excepting Garnet.

Reliance.—Reliance constituted the sixth variety in Zone 1. Showing an average yield of 6.2 bushels per acre it outyielded all other varieties sown in this zone, having exceeded Marquis by 1.2 bushels, Thatcher by 1.1 bushels, Apex by 1.4 bushels and Renown by 2.5 bushels. Reliance ripened in 109 days (see explanation under heading, "Number of Days from Sowing to Ripening, summarized in Cereal Variety Zones.") and was later than all other varieties sown in similar tests, being slightly later than Apex, 1 day later than Marquis, approximately 2½ days later than Thatcher and Renown, and 7 days later than Reward. In strength of straw it was slightly weaker than Marquis and Renown, was equal to Thatcher and slightly stronger than Apex and Reward. Reliance was slightly exceeded in height by Marquis, Thatcher and Apex but was nearly .5 inch taller than Renown and over .5 inch taller than Reward. The average weight per bushel was 64.2 lbs. and Reliance excelled all other varieties grown in similar tests being 1.1 lbs. heavier than Marquis, .4 lb. heavier than Reward, 1.8 lbs. heavier than Thatcher, 1.6 lbs. heavier than Apex, and 1.5 lbs. heavier than Renown.

Commercial grades were shown as follows: 1 Hard—40%; 1°—50%; 3°—10%. In the area where Reliance was grown as the sixth variety rust infection was shown in only one test. In this test Reliance appeared to be more susceptible than any of the other varieties.

Renown.—Renown was grown in all tests and over the whole project showed an average yield per acre of 12.4 bushels. With the exception of Reward, Renown was inferior in yielding ability to all other varieties which were sown in all tests having been outyielded by the following differences: Marquis .4 bushel; Thatcher 2.6 bushels; Apex 1 bushel. Renown, however, outyielded Reward by a difference of 1 bushel.

A comparison of Renown with the sixth varieties grown in similar tests shows it was exceeded in yield by the following differences: Reliance 2.5 bushels; Ceres 1.6 bushels and Garnet .5 bushel. Renown required an average of 95.1 days from sowing to ripening and was practically equal in its maturity period to Thatcher, 2.4 days earlier than Marquis and 1.3 days earlier than Apex. It was, however, 1.8 days later than Reward. It was also shown to be 2.5 days earlier than Reliance, slightly later than Ceres and 3.7 days later than Garnet. In straw strength Renown was slightly superior to Reward and Garnet, but was somewhat weaker than Marquis, Thatcher and Apex. It was also slightly superior to Reliance and Ceres. Over the whole testing project Renown averaged in height 20.8 inches, being slightly shorter than Marquis. It was, however, slightly taller than Reward and Thatcher and .7 inch taller than Apex. When compared to other varieties sown in similar tests Renown appeared to be .5 inch shorter than Ceres, .4 inch shorter than Reliance, but was slightly taller than Garnet. In bushel weight Renown averaged over the entire project 62.8 lbs., being slightly heavier than Apex, and nearly 1 lb. heavier than Thatcher. It was, however, exceeded by the other varieties grown in all tests by the following differences: Marquis .4 lb. and Reward 1.2 lbs. Renown was also 1.4 lbs. heavier than Garnet, but was .3 lb. lighter than Ceres and 1.5 lbs. lighter than Reliance. The commercial grades placed on Renown were as follows: 1 Hard—16%; 1°—47%; 2°—23%; 3°—11%; 4°—1%; No. 5—1%; Rej. 2—1%. In the areas where rust infection was evident Renown appeared to be highly resistant.

Reward.—Reward was grown in all tests. Showing an average yield over the whole project of 11.4 bushels per acre, it was inferior in yielding ability to all other varieties grown in all tests, being outyielded by the following differences: Marquis 1.4 bushels; Thatcher 3.6 bushels; Apex 2 bushels; and Renown 1 bushel. A comparison with Reliance, Ceres and Garnet, when grown under identical conditions shows that Reward was outyielded by the following differences: Reliance 2.3 bushels; Ceres 2.8 bushels; Garnet 1.4 bushels. Averaging over the whole project 93.3 days from sowing to ripening, Reward showed the lowest maturity period when compared to other varieties grown in all tests, being 4.2 days earlier than Marquis; 3.1 days earlier than Apex; 1.8 days earlier than Renown; and 1.7 days earlier than Thatcher. A comparison of Reward with other varieties in the project when grown under identical conditions shows that it was 7 days earlier than Reliance, 1.5 days earlier than Ceres, but 1.8 days later than Garnet. With the exception of Garnet, Reward was weaker in straw than any of the other varieties. In height Reward averaged over the whole project 20.6 inches. It was .5 inch shorter than Marquis, slightly shorter than Renown, equal to Thatcher, .5 inch taller than Apex, approximately .5 inch shorter than Ceres and practically equal in height to Garnet. It was, however, exceeded by Reliance by .6 inch. Reward generally excelled in weight per measured bushel and averaged throughout the whole project 64 lbs. In Zone 1, however, it was exceeded by Reliance by a difference of .4 lb. It outweighed the other varieties by the following differences: Marquis .8 lb., Thatcher 2.1 lbs., Apex 1.4 lbs., Renown 1.2 lbs., Ceres 1 lb., and Garnet 2.3 lbs. The commercial grades placed on Reward were as follows: 1 Hard—20%; 1°—47%; 2°—22%; 3°—8%; 4°—2%, and No. 5—1%. In the area where rust was evident Reward appeared to be less susceptible to infection than Marquis, Reliance and Garnet, but it was more susceptible than Ceres, and much more susceptible than Thatcher, Apex and Renown.

Thatcher.—Thatcher was grown in all tests, and, with the exception of Zone 1, where Reliance exceeded it in yield per acre by 1.1 bushels, generally outyielded all other varieties. A comparison with other varieties grown in all tests shows that Thatcher averaged 15 bushels per acre, and outyielded its nearest competitor Apex by 1.6 bushels, Marquis by 2.2 bushels, Renown by 2.6 bushels and Reward by 3.6 bushels. Compared to Ceres when grown in similar tests it exceeded this variety in yield per acre by 1 bushel. A comparison with Garnet when grown in identical tests shows that Thatcher outyielded Garnet by 2.4 bushels. Thatcher averaged 95 days from sowing to ripening, and was slightly earlier than Renown, 1.4 days earlier than Apex and 2.5 days earlier than Marquis. It was, however, 1.7 days later than Reward. A comparison with Reliance also shows Thatcher to have been 2.6 days later. It was approximately equal in "earliness" to Ceres and 3.6 days later than Garnet. Thatcher appeared slightly weaker in straw than Marquis, but slightly stronger than Apex, Reward and Renown. It equalled Reliance in straw strength, but was somewhat stronger than Ceres and Garnet. Over the whole project Thatcher showed an average height of 20.6 inches. It was slightly shorter than Marquis, Renown and Ceres, equal in height to Reward, .5 inch taller than Apex, and slightly taller than Reliance. Garnet exceeded Thatcher in height by .8 inch. Thatcher averaged 61.9 lbs. per measured bushel and with the exception of Garnet was outweighed by all other varieties by the following differences: Reward 2.1 lbs.; Marquis,

1.3 lbs.; Renown .9 lb.; Apex .7 lb.; Reliance 1.8 lbs.; and Ceres 1.3 lbs. Thatcher, however, outweighed the Garnet variety by .5 lb. The commercial grades of the Thatcher variety were as follows: 1 Hd.—15%; 1°—42%; 2°—24%; 3°—15%; 4°—2%; No. 5—1%; Rejected 2—1%.

The results of this project would show that Thatcher was considerably more resistant to stem rust than all other varieties with the exception of Apex and Renown.

Table No. 20 shows the results of the individual tests arranged by Wheat Pool Districts. A careful study of this table will allow a co-operator to compare the results of his test with those of other co-operators in different parts of the Province. Thus co-operator Burton Edward Taylor of Gainsborough, whose test designation is "A" of sub-district 1, Zone 3A and in Pool District 1, observes that Thatcher yielded at the rate of 4 bushels more than Marquis, Ceres, Reward and Apex. The significant difference in yield for his test is 2.52 bushels per acre, therefore, as four is more than 2.52, Thatcher proved to be distinctly better yielding than the other varieties which we have mentioned. After examining in this way the results of his own test, Burton Taylor then turns to other tests and compares the results in the same manner. The examination of the results will reveal that the varieties do not maintain the same relationship in different areas and sometimes even in tests which are fairly close together. A number of causes contribute to such conditions, the most important being variations in soil, local weather conditions, and in the date of sowing. Each individual test, however, gives an accurate indication of the comparative performance of the varieties for the year 1937 under the conditions existing on the farm where the test was made.

EXPLANATION OF COMMERCIAL GRADES

While the bushel weight of wheat is an important feature in determining the commercial grades, other factors must necessarily be taken into consideration. In order that the grades which have been placed on the different varieties may be followed more closely we have shown in the individual summarized results some of the defects which have caused grade losses more severe than the bushel weight would indicate. While the different defects will be easily observed it still remains impossible to show the exact extent of the injury but we trust that in a general way where the bushel weight is relatively high and somewhat low grades have been placed on the grain, the nature of the defects will be recognized. The following symbols have been used to indicate these defects: S g.—Some green; G.—Green; V g.—Very green; S sh.—Some shrunken; Sh.—Shrunken; S b.—Some bleached; B.—Bleached; S i.—Some immature; I.—Immature; S b p.—Some black point; B p.—Black point; S st.—Some starchy; St.—Starchy; V st.—Very starchy; Mxd. H.—Mixed Heated; S p.—Some pink; P.—Pink; F.—Frosted; My.—Musty; Sp.—Sprouted.

Individual Summarized Results of All Tests—In Wheat Pool Districts

WHEAT POOL DISTRICT 1

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
BURTON EDWARD TAYLOR, GAINSBOROUGH												
3A	1	1	A	Marquis.....	16	23	....	10	61.5	2	G. Sh.	16.2
..	Ceres.....	16	23	....	9	64	2	S g. Sh.	16.0
..	Reward.....	16	22	....	10	62.5	2	G. Sh.	17.1
..	Thatcher.....	20	23	....	10	62	2	B. Sh.	17.4
..	Apex.....	16	22	....	10	60	2	G. Sh.	16.7
..	Renown.....	17	23	....	10	60.5	2	B. G.	16.9
Significant difference between varieties 2.52 bus.												

RUSSEL YATES, STORTHOAKS												
3A	1	2	B	Marquis.....	13	19	....	10	63	1	G.	15.7
..	..	..	..	Ceres.....	14	20	....	10	62.5	1	S g.	15.6
..	..	..	..	Reward.....	14	21	....	10	64.5	1	S g.	16.6
..	..	..	..	Thatcher.....	16	19	....	10	62.5	1	B. Sh.	15.8
..	..	..	..	Apex.....	13	18	....	10	62	1	S g.	15.3
..	..	..	..	Renown.....	12	20	....	10	63.5	1	S g.	15.3
No significant difference between varieties.												

RAY W. BARBER, AUBURNTON												
2A	1	3	B	Marquis.....	1	....	....	....	*	3	Sh.	16.5
..	..	..	..	Ceres.....	1	....	....	....	*	3	Sh.	15.8
..	..	..	..	Reward.....	1	....	....	....	*	3	Sh.	17.1
..	..	..	..	Thatcher.....	1	....	....	....	*	3	Sh. B.	16.4
..	..	..	..	Apex.....	1	....	....	....	*	3	Sh.	16.1
..	..	..	..	Renown.....	1	....	....	....	*	3	Sh.	16.2
No significant difference between varieties.												

WILLIAM KEITH LEGGE, WILLMAR												
2A	1	4	A	Marquis.....	....	14	....	10	....	..	....	....
..	..	..	..	Ceres.....	....	14	....	10	....	..	....	....
..	..	..	..	Reward.....	....	14	....	10	....	..	....	....
..	..	..	..	Thatcher.....	....	15	....	10	....	..	....	....
..	..	..	..	Apex.....	....	14	....	10	....	..	....	....
..	..	..	..	Renown.....	....	14	....	10	....	..	....	....
Significant difference—(Severe grasshopper damage. No samples received).												

HENRY EUGENE RUSSELL, WAUCHOPE												
3A	1	10	A	Marquis.....	11	21	....	10	62	2	G.	15.8
..	..	..	..	Ceres.....	17	25	....	10	60.5	2	S g.	14.5
..	..	..	..	Reward.....	9	24	....	10	63	2	G.	17.3
..	..	..	..	Thatcher.....	15	24	....	10	60	2	B. Sh.	16.4
..	..	..	..	Apex.....	7	19	....	10	57	3	Sh. G.	17.0
..	..	..	..	Renown.....	12	24	....	10	60.5	2	G.	15.4
Significant difference between varieties 4.73 bus.												

KENNETH ALASTAIR CAMERON, CARLYLE												
3A	1	10	B	Marquis.....	2	19	83	8.3	*	3	Sh. G.	16.9
..	..	..	..	Ceres.....	6	20	78	8.3	60	2	Sh.	16.6
..	..	..	..	Reward.....	6	21	79	8	59.5	2	Sh. S g.	18.4
..	..	..	..	Thatcher.....	5	22	79	8.7	57.5	3	Sh. B.	18.8
..	..	..	..	Apex.....	3	21	81	8.3	59	2	Sh. S g.	18.2
..	..	..	..	Renown.....	3	20	81	8.3	59.5	2	Sh. S g.	16.9
Significant difference between varieties 2.11 bus.												

OATLANDS SCHOOL, FRYs												
3A	1	10	C	Marquis.....	3	16	....	10	61	2	Sh. G.	17.7
..	..	..	..	Ceres.....	5	15	....	10	60	2	B. Sh.	16.1
..	..	..	..	Reward.....	2	16	....	10	*	2	Sh.	18.2
..	..	..	..	Thatcher.....	5	15	....	10	57	3	B. Sh.	17.3
..	..	..	..	Apex.....	5	16	....	10	58	2	Sh.	17.3
..	..	..	..	Renown.....	4	15	....	10	58.5	2	Sh.	16.4
No significant difference between varieties.												

* Insufficient to weigh.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

2A	1	1	B	Russell Warren Douglas, Carnduff	1	1	7	A	Wayne Edward McAlpine, Oungre.
3A	1	2	A	Alexander Gervais, Alida.	2A	1	7	B	Colin Cameron Thackeray, Goodwater.
2A	1	3	A	William Graham Deyell, Alameda.	2A	1	8	A	Donald Alexander Turner, McTaggart.
2A	1	4	B	Metro Katrusik, Bienfait.	2A	1	8	B	Neil Victor Fenwick, Griffin.
2A	1	5	A	Roger Carlton, Benson.	2A	1	9	A	Clarence Andrew Hookonsen, Kisbey.
2A	1	5	B	George Raymond Hursh, Macoun.	2A	1	9	B	Kenneth Grant Gray, Stoughton.
2A	1	6	A	Albert Miller Manley, Midale.	2A	1	9	C	Walter Howard Donnelly, Stoughton.
1	1	6	B	Arthur Dornian, Outram.					

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, the Test Designation.

Straw strength taken on basis of 0 to 10, with 10 indication very strong.

WHEAT POOL DISTRICT 2

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes.

1	2	1	A	Paul Fontaine, Radville.	1	2	6	A	Allistar Chisholm, Fir Mountain.
1	2	1	B	Elvin Peterson, Radville.	1	2	6	B	Joseph Burnlee Harding, La Fleche.
1	2	2	A	Andros Wiome, Minton.	1	2	7	A	Russell Melvin Reisner, Limerick.
1	2	2	B	Robert T. McCutcheon, Ceylon.	1	2	7	B	John W. Pana, Wood Mountain.
1	2	3	A	Hubert Anthony Winter, Coronach.	1	2	8	A	H. J. C. Brown, Readlyn.
1	2	4	A	Robert Edwin Gosselin, Willowbunch.	1	2	8	B	Henry Mervin Price, Readlyn.
1	2	4	B	Emanuel Paul Kaczmariski, Constance.	1	2	9	A	Robert Viergutz, Dahinda.
1	2	5	A	Arthur Walter Davey, Lones me Butte.	1	2	9	B	Allen L. MacDonald, Bengough.
1	2	5	B	Kenneth Hubert Barker, Killdeer.	1	2	10	A	William Alan Clews, Pangman.
					1	2	10	B	Orville Glen Swedburg, Trossachs.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 3

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
JEAN AMBROSE STAV, VAL MARIE												
1	3	2	A	Marquis.....	1	7	108	9.3	*	1	....	16.4
..	Reliance.....	2	10	113	9.3	*	1	....	16.7
..	Reward.....	2	10	99	8	*	1	....	18.3
..	Thatcher.....	3	9	111	9	*	1	....	17.2
..	Apex.....	2	9	114	9.3	*	1	....	16.0
..	Renown.....	1	11	....	9.7	*	1	....	17.1
Significant Difference—(Samples incomplete).												

DONALD JOSEPH KEEN, TREELON												
1	3	3	A	Marquis.....	4	....	....	....	60	1	....	15.6
..	..	..	..	Reliance.....	7	....	....	....	62	1	....	15.9
..	..	..	..	Reward.....	5	....	....	....	64	1	I. S g.	16.9
..	..	..	..	Thatcher.....	4	....	....	....	60	1	....	16.8
..	..	..	..	Apex.....	3	....	....	....	61.5	1	....	16.1
..	..	..	..	Renown.....	3	....	....	....	61.5	1	....	16.5
Significant difference between varieties 1.91 bushels.												

* Insufficient to weigh.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

1	3	1	A	Donald Hamilton McTaggart, Ferland	2C	3	6	B	Thomas Alfred Bircham, Kealey Springs.
1	3	1	B	Clifford Sanrud, Mankota.	1	3	7	A	Conrade Keturakis, Shaunavon.
1	3	2	B	Lewis Milton Hill, Wallard.	1	3	7	B	Wilbert Henry Lewis, Eastend.
1	3	3	B	Miss Elizabeth Anne Bertram, Climax.	2C	3	8	A	Donald Alexander Meinert, Instow.
1	3	4	A	Leroy Pauley, Loomis.	2C	3	8	B	Clarence Gust Nelson, Instow.
1	3	4	B	Alfred Acourt Hyam, Claydon.	1	3	9	A	Albert John Thompson, Admiral.
1	3	5	A	Harold Oswald Bakken, Robsart.	1	3	9	B	Keith Ivan Selanders, Beaver Valley.
1	3	5	B	Craig Trumpour, Govenlock.	1	3	10	A	Kelso Wesley Walls, Aneroid.
2C	3	6	A	Bill Stork, Klintonel.	1	3	10	B	Harold Frederick George Burtle, Aneroid.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 4

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

2C	4	1	A	Harvey Thomas Mellor, Garden Head.	1	4	6	A	Charles Duncan Ahlberg, Golden Prairie.
1	4	1	B	Robert Timothy Hecker, Piapot.	1	4	6	B	Harold J. Hanson, Maple Creek.
1	4	1	C	Glen Armitage, Piapot.	1	4	7	A	Albert Harold Patric Preboy, Fox Valley.
1	4	2	A	Edward White, Maple Creek.	1	4	7	B	Anton Hilseneger, Richmond.
1	4	2	B	Peter Hawrylak, Maple Creek.	1	4	8	A	Edward Ernest Schroder, Burstall.
2C	4	3	A	Leslie Wilbur Tuttle, Beverley.	1	4	8	B	Victor Julius Ebel, Leader.
1	4	3	B	Owen Roger Malchow, Cantuar.	1	4	9	A	Charles Peter Stenhouse, Portreeve.
1	4	4	A	William Mitchell Rudolph, Gull Lake.	1	4	9	B	William Edwin Rowbotham, Lemsford.
1	4	4	B	John Jason Rebman, Verlo.	1	4	10	A	Arnold Odell Sannes, Hazlet.
1	4	5	A	Howard Kenneth Gummeson, Cabri.	1	4	10	B	Robert Harold Coleman, Abbey.
1	4	5	B	Walter George Bowditch, Success.					

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 5

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in percentage
LAWRENCE JOHN HICKS, EASTLEIGH												
1	5	6	B	Marquis.....	8	....	....	....	64.5	1 Hd.	....	14.1
..	Reliance.....	9	....	....	....	65	1 Hd.	....	14.1
..	Reward.....	6	....	....	....	65	1 Hd.	....	16.5
..	Thatcher.....	9	....	....	....	64	1 Hd.	....	15.1
..	Apex.....	7	....	....	....	64	1 Hd.	....	14.2
..	Renown.....	7	....	....	....	64	1 Hd.	....	16.0

Significant difference between varieties 1.38 bushels.

DARL EDWIN HICKS, MARQUIS												
2A	5	8	B	Marquis.....	11	20	95	9.7	....	1 Hd.	....	14.4
..	..	..	..	Ceres.....	14	21	95	8.8	....	1 Hd.	....	15.6
..	..	..	..	Reward.....	11	21	91	8.2	....	1 Hd.	....	17.0
..	..	..	..	Thatcher.....	14	21	93	9.2	....	1 Hd.	....	15.7
..	..	..	..	Apex.....	13	21	93	9.7	....	1 Hd.	....	14.9
..	..	..	..	Renown.....	11	20	93	9	....	1 Hd.	....	16.1

Significant difference between varieties 2.32 bushels.

ALBERT SMITH, DROXFORD												
1	5	9	A	Marquis.....	5	19	....	10	*	1 Hd.	....	13.4
..	..	..	..	Reliance.....	7	18	....	10	64	1 Hd.	....	12.7
..	..	..	..	Reward.....	1	14	....	10	*	1 Hd.	....	15.9
..	..	..	..	Thatcher.....	5	16	....	10	62	1 Hd.	....	13.5
..	..	..	..	Apex.....	6	21	....	10	62	1 Hd.	....	13.3
..	..	..	..	Renown.....	2	17	....	10	*	1 Hd.	....	13.9

Significant difference between varieties—(Samples incomplete).

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

1	5	1	A	Richard Alexander Jolly, Mossbank.	1	5	5	B	Elford Edwin Bell, Wiwa Hill.
1	5	1	B	Charles Ivar Tollefson, Ettington.	1	5	6	A	Lorie Haug, Ada.
1	5	2	A	Hugh Lazenby, St. Boswells.	1	5	7	A	Thos. Leonard, Parkbeg.
1	5	2	B	Leo Nelson Pelletier, Gravelbourg.	1	5	7	B	Duncan Gordon McLachlan, Boharm.
2C	5	3	A	George Andrew Bannerman, Neville.	1	5	8	A	John Douglas Beck, Mawer.
1	5	3	B	Austin E. McKee, Neville.	1	5	9	B	Bowyer Bradford, Jr., Lawson.
1	5	4	A	Cyril John James, Waldeck.	1	5	10	A	Harold Lloyd Roberts, Morse.
1	5	4	B	Eustace Hedley Dunn, Burnham.	1	5	10	B	David Stewart Gall, Calderbank.
1	5	5	A	Harry Andrew Paulsen, Scottsburgh.					

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 6

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in percentage
DONALD A. BUCHANAN, FRANCIS												
2A	6	2	C	Marquis.....	3	....	90	9.7	*	1 Hd.	....	15.8
..	Ceres.....	3	....	90	9.3	61.5	1	Sh.	16.2
..	Reward.....	2	....	89	9.7	*	1 Hd.	....	16.5
..	Thatcher.....	2	....	91	9.7	*	1	Sh.	16.6
..	Apex.....	5	....	90	9.7	60	1	Sh.	15.8
..	Renown.....	2	....	92	9	*	1	Sh.	16.1

No significant difference between varieties.

LLOYD O. LIND, BILDON												
1	6	5	A	Marquis.....	2	15	104	7.7	*	1 Hd.	....	14.8
..	..	..	..	Reliance.....	4	13	108	6	64.5	1 Hd.	....	15.0
..	..	..	..	Reward.....	2	14	100	6	*	1 Hd.	....	16.5
..	..	..	..	Thatcher.....	2	13	103	7	63	1 Hd.	....	16.2
..	..	..	..	Apex.....	3	14	106	6.7	62.5	1 Hd.	....	14.9
..	..	..	..	Renown.....	3	13	101	6.7	*	1 Hd.	....	15.8

No significant difference between varieties.

JACK E. HARLTON, STONY BEACH												
2A	6	6	B	Marquis.....	5	....	....	....	60.5	1	Sh.	13.6
..	..	..	..	Ceres.....	5	....	....	....	62	1	S sh.	14.6
..	..	..	..	Reward.....	1	....	....	....	*	1	....	16.1
..	..	..	..	Thatcher.....	4	....	....	....	62	1	S sh.	15.2
..	..	..	..	Apex.....	5	....	....	....	62.5	1	....	13.5
..	..	..	..	Renown.....	3	....	....	....	*	1	....	15.2

No significant difference between varieties.

ERNEST FRANK HENRY KOCH, EDENWOLD												
2A	6	7	A	Marquis.....	6	....	....	8.9	64	1	S g.	16.4
..	..	..	..	Ceres.....	4	....	....	8.9	63	1	Sh.	16.3
..	..	..	..	Reward.....	4	....	....	8.7	64	1	S g.	18.4
..	..	..	..	Thatcher.....	5	....	....	9.3	62.5	1	S b.	17.1
..	..	..	..	Apex.....	4	....	....	8.8	62.5	1	S g.	16.0
..	..	..	..	Renown.....	4	....	....	9.2	64	1	S b. Sh.	16.6

No significant difference between varieties.

* Insufficient to weigh.

Wheat Pool District 6—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
WILLIAM CHUBB, AVONHURST												
2A	6	8	B	Marquis.....	7	10	93	10	64.5	1 Hd.	....	15.7
"	"	"	"	Ceres.....	7	9	92	9	64	1 Hd.	....	16.0
"	"	"	"	Reward.....	7	12	91	9.7	64	1	S b. S g.	17.2
"	"	"	"	Thatcher.....	8	11	92	10	61.5	1	S b. Sh.	16.2
"	"	"	"	Apex.....	7	10	92	5.7	62	1	S b. Sh.	15.6
"	"	"	"	Renown.....	6	11	93	8.3	61.5	1	S b. Sh.	16.0

No significant difference between varieties.

ELWOOD ROY ALDOUS, LORLIE												
3A	6	9	A	Marquis.....	18	23	102	9.7	65.5	1	S b p.	14.1
"	"	"	"	Ceres.....	16	23	100	8	64	1	S g.	15.1
"	"	"	"	Reward.....	15	23	99	9	66	1	S g.	15.8
"	"	"	"	Thatcher.....	17	21	98	10	64	1	S b.	15.1
"	"	"	"	Apex.....	17	23	101	10	65	1	S b p.	14.0
"	"	"	"	Renown.....	15	22	101	9.7	65	1	S g.	15.2

No significant difference between varieties.

GEORGE RATTRAY McLEAN, LORLIE												
3A	6	9	B	Marquis.....	16	24	100	10	64.5	1	G.	15.3
"	"	"	"	Ceres.....	17	23	100	10	64	1	S g.	16.7
"	"	"	"	Reward.....	12	23	99	10	64.5	1	G. Sh.	17.5
"	"	"	"	Thatcher.....	17	23	99	10	64	1	G. Sh.	16.3
"	"	"	"	Apex.....	14	24	100	9.7	63.5	1	S b p. G.	15.0
"	"	"	"	Renown.....	12	25	99	9.7	63	1	B. G.	16.7

Significant difference between varieties 2.42 bus.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes.

2A 6 1 A	Edward Roy Vanstone, Lang.	2A 6 5 B	Wm. Barclay Green, Boharm.
2A 6 1 B	Miles Duffus, Colfax.	2A 6 6 A	Clifford Burdette Elder, Drinkwater.
2A 6 2 A	Clifford Woodrow Kennedy, Kronau.	2A 6 6 C	Stanley Peter Sorenson, Rouleau.
2A 6 2 B	Garth Vernon Boesch, Riceton.	2A 6 7 B	Ray Clarke, R.R. No. 2, Regina.
2A 6 3 A	Geo. L. Nelson, Wilcox.	2A 6 8 A	Ernest Brooks Donnelly, Indian Head.
2A 6 3 B	Cameron Alden Hubbs, Milestone.	2B 6 10 A	Wm. Arthur Robert McLean, Lumsden.
1 6 4 A	Donald Clifton Campbell, Avonlea.	2B 6 10 B	Edison McRae, Lumsden.
1 6 4 B	George Peter Machmer, Spring Valley.		

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 7

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
HUGH DUNCAN AYRES, FAIRLIGHT												
3A	7	1	A	Marquis.....	15	28	105	8.7	58.5	2	G. Sh.	13.3
"	"	"	"	Ceres.....	19	28	103	8	62.5	1	Sh.	13.8
"	"	"	"	Reward.....	17	29	101	8.7	64.5	1 Hd.	....	15.1
"	"	"	"	Thatcher.....	23	29	102	9	62.5	1	S b.	15.0
"	"	"	"	Apex.....	19	28	103	8.7	61.5	1	S g.	15.0
"	"	"	"	Renown.....	21	29	102	8.7	62.5	1	S g.	15.2

Significant difference between varieties 3.03 bushels.

WILLIAM FREDERICK REUBEN HARRIS, RYERSON												
3A	7	1	B	Marquis.....	14	....	102	9.3	62	1	S g.	14.9
"	"	"	"	Ceres.....	10	....	109	9	63	1 Hd.	....	14.4
"	"	"	"	Reward.....	4	....	109	6	*	1	G.	15.8
"	"	"	"	Thatcher.....	10	....	109	9.3	62.5	1	S b.	15.5
"	"	"	"	Apex.....	13	....	109	8.7	62.5	1	S g.	15.4
"	"	"	"	Renown.....	6	....	109	8	62.5	1	S g.	14.9

Significant difference between varieties 5.15 bushels.

THOMAS PURDEY, MOOSOMIN												
3A	7	2	A	Marquis.....	15	27	104	9.3	62	2	G. Sh.	16.1
"	"	"	"	Ceres.....	19	31	101	8.3	62	1	....	14.9
"	"	"	"	Reward.....	18	30	95	7.7	64	1	S g.	16.3
"	"	"	"	Thatcher.....	22	32	98	9	61	2	B. Sh.	15.1
"	"	"	"	Apex.....	14	30	101	8.3	59.5	2	Sh. G.	16.5
"	"	"	"	Renown.....	18	30	98	8.3	62	1	Sh. G.	14.9

Significant difference between varieties 2.83 bushels.

LLOYD ALFRED GRIFFIN, MOOSOMIN												
3A	7	2	B	Marquis.....	8	15	....	8	62	1	S sh.	16.7
"	"	"	"	Ceres.....	12	19	....	7.7	64	1	....	14.5
"	"	"	"	Reward.....	11	20	....	7	61.5	1	Sh.	16.8
"	"	"	"	Thatcher.....	11	19	....	7.7	61	1	Sh.	15.4
"	"	"	"	Apex.....	10	17	....	7.7	61	1	....	16.3
"	"	"	"	Renown.....	13	21	....	7.7	62	1	S sh.	14.4

No significant difference between varieties.

* Insufficient to weigh.

Wheat Pool District 7—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
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VICTOR PERCIVAL HALL, VANDURA

3A	7	3	A	Marquis.....	19	29	9.3	63	2	S b. G.	14.0
..	Ceres.....	21	32	9	61	2	B.	13.9
..	..	..	..	Reward.....	12	21	....	8.3	63	2	B. G.	16.7
..	..	..	..	Thatcher....	26	28	....	9.7	61.5	2	B.	14.5
..	..	..	..	Apex.....	18	26	....	9.7	61.5	2	B.	14.2
..	..	..	..	Renown.....	14	23	....	9	62.5	2	B. Sh.	14.4

Significant difference between varieties 7.77 bus.

HENRY JOHN WILSON, WAWOTA

3A	7	3	B	Marquis.....	..	30	99	10	....	..	....	....
..	..	..	..	Ceres.....	..	30	99	10	....	..	....	....
..	..	..	..	Reward.....	..	30	95	9.7	....	..	....	....
..	..	..	..	Thatcher....	..	27	95	9.7	....	..	....	....
..	..	..	..	Apex.....	..	29	96	9.7	....	..	....	....
..	..	..	..	Renown.....	..	28	97	9.3	....	..	....	....

Significant difference between varieties—(No samples received).

J. A. ARNOLD KEITH, INCHKEITH

2A	7	4	A	Marquis.....	..	12	98	8.7	....	..	....	....
..	..	..	..	Ceres.....	..	15	91	8.5	....	..	....	....
..	..	..	..	Reward.....	..	9	95	7.7	....	..	....	....
..	..	..	..	Thatcher....	..	13	95	7.5	....	..	....	....
..	..	..	..	Apex.....	..	14	95	8	....	..	....	....
..	..	..	..	Renown.....	..	12	92	8.7	....	..	....	....

Significant difference between varieties—(No samples received).

MISS ETHEL MAY BROWN, WINDTHORST

2A	7	4	B	Marquis.....	14	25	109	8	63	1	S b. G.	14.8
..	..	..	..	Ceres.....	13	24	105	10	63.5	1	G.	14.7
..	..	..	..	Reward.....	12	23	102	10	66	1	S g.	17.2
..	..	..	..	Thatcher....	13	23	102	10	63	1	S b. G.	16.5
..	..	..	..	Apex.....	12	22	105	10	62.5	1	S b. G.	14.9
..	..	..	..	Renown.....	11	23	102	9	64	1	S b. G.	14.8

No significant difference between varieties.

DONALD HAMILTON McKAY, CORNING

2A	7	5	A	Marquis.....	..	14	....	9	....	..	....	....
..	..	..	..	Ceres.....	..	16	....	7.7	....	..	....	....
..	..	..	..	Reward.....	..	18	....	7	....	..	....	....
..	..	..	..	Thatcher....	..	17	....	8	....	..	....	....
..	..	..	..	Apex.....	..	16	....	8.3	....	..	....	....
..	..	..	..	Renown.....	..	16	....	7.7	....	..	....	....

Significant difference between varieties—(No samples received).

ANTOINE PERRON, MONTMARTRE

2A	7	6	A	Marquis.....	5	17	97	10	63	1	S g.	14.7
..	..	..	..	Ceres.....	7	18	96	9.3	63	1	S g.	14.4
..	..	..	..	Reward.....	7	20	94	8	64.5	1 Hd.	....	16.1
..	..	..	..	Thatcher....	8	19	95	8.7	62	1	S g.	15.8
..	..	..	..	Apex.....	7	17	96	10	62	1	S g.	14.8
..	..	..	..	Renown.....	6	19	94	9.7	63.5	1	S g.	15.0

Significant difference between varieties .97 bushels.

LORENZE LUDWIG SCHNEIDER, WOLSELEY

3A	7	7	A	Marquis.....	4	15	90	9.3	62	1	S sh.	14.9
..	..	..	..	Ceres.....	6	15	88	8.3	62	1	S g.	15.5
..	..	..	..	Reward.....	5	16	89	8	64	1	S g.	17.2
..	..	..	..	Thatcher....	5	16	89	8.7	62.5	1	B.	16.2
..	..	..	..	Apex.....	7	16	89	9.7	62	1	S g.	14.6
..	..	..	..	Renown.....	5	16	90	8.7	62.5	1	S g.	16.1

No significant difference between varieties.

NORMAN YATES, GRENFELL

3A	7	7	B	Marquis.....	4	14	99	9	64	1 Hd.	....	15.2
..	..	..	..	Ceres.....	4	12	94	8.7	63	1	S b.	15.7
..	..	..	..	Reward.....	4	12	95	7.7	64.5	1 Hd.	....	17.1
..	..	..	..	Thatcher....	4	12	96	7.7	63	1	S b.	16.2
..	..	..	..	Apex.....	5	13	99	9	63	1	S b.	15.0
..	..	..	..	Renown.....	3	10	95	9	63	1 Hd.	Sh.	16.2

No significant difference between varieties.

ALLAN GORDON STRANGLUND, PERCIVAL

3A	7	8	B	Marquis.....	10	20	....	10	58	3	Sh. V g.	18.8
..	..	..	..	Ceres.....	11	21	....	9	60	2	Sh. S g.	15.6
..	..	..	..	Reward.....	11	24	....	8.7	60	2	....	19.8
..	..	..	..	Thatcher....	10	22	....	9.3	57	3	B.	18.6
..	..	..	..	Apex.....	8	20	....	9.7	57	3	Sh. G.	19.0
..	..	..	..	Renown.....	11	23	....	9.7	57	3	Sh. G.	19.0

No significant difference between varieties.

Wheat Pool District 7—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
JOHNNIE DUNCAN SALKELD, GERALD												
3B	7	9	A	Marquis.....	22	22	....	7	....	..	....	....
..	Ceres.....	22	22	....	7	....	..	....	....
..	Reward.....	21	21	....	6.3	....	..	....	....
..	Thatcher.....	23	23	....	7	....	..	....	....
..	Apex.....	20	20	....	6	....	..	....	....
..	Renown.....	21	21	....	6.3	....	..	....	....

Significant difference between varieties—(No samples received).

LLOYD W. D. KIRK, MARCHWELL												
3B	7	9	B	Marquis.....	20	26	87	10	63.5	1 Hd.	....	14.7
..	..	..	..	Ceres.....	22	27	88	10	65	1 Hd.	....	14.5
..	..	..	..	Reward.....	18	24	90	10	65.5	1 Hd.	....	16.4
..	..	..	..	Thatcher.....	20	26	87	10	63	1 Hd.	....	15.8
..	..	..	..	Apex.....	18	23	89	10	62.5	1 Hd.	....	15.7
..	..	..	..	Renown.....	18	26	87	10	64	1 Hd.	....	15.2

No significant difference between varieties.

ARNOLD VICTOR NIEBERGALL, NEUDORF												
3A	7	10	A	Marquis.....	13	13	....	3	....	..	....	....
..	..	..	..	Ceres.....	14	14	....	4.3	....	..	....	....
..	..	..	..	Reward.....	12	12	....	3	....	..	....	....
..	..	..	..	Thatcher.....	13	13	....	3.7	....	..	....	....
..	..	..	..	Apex.....	11	11	....	3.7	....	..	....	....
..	..	..	..	Renown.....	12	12	....	3.3	....	..	....	....

Significant difference between varieties—(Severe drought and gopher damage—no samples received).

ROBERT MATSON, DUBUC												
3A	7	10	B	Marquis.....	11	22	93	7	61	1	G.	15.9
..	..	..	..	Ceres.....	11	23	92	7	61	1	S g. Sh.	15.3
..	..	..	..	Reward.....	9	22	91	7	64	1	S g.	16.7
..	..	..	..	Thatcher.....	11	23	93	7	60	1	B. Sh.	16.6
..	..	..	..	Apex.....	10	21	93	7	60	2	Sh. G.	17.0
..	..	..	..	Renown.....	10	24	93	7	62	1	Sh. G.	15.6

No significant difference between varieties.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes.

2A	7	5	B	Miss Ruth Evelyn MacNaughton, Creelman.
2A	7	6	B	William James Perdue, Peebles.
3A	7	8	A	Ernest Lloyd Gray, Rocanville.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 8

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
PAUL TITOFF, WROXTON												
3B	8	1	B	Marquis.....	19	36	100	6.7	62	1	Sh.	14.9
..	Ceres.....	25	38	96	8.7	63.5	1	S b.	14.8
..	Reward.....	22	35	96	4.7	65.5	1 Hd.	....	16.6
..	Thatcher.....	26	32	96	1.7	62	1	B.	14.7
..	Apex.....	20	31	102	1	62	1	S b.	13.3
..	Renown.....	26	33	102	3	63.5	1	S b.	13.9

Significant difference between varieties—(Samples incomplete).

RONALD RICHARD MOFFAT, SALTCOATS												
3C	8	2	A	Marquis.....	7	12	94	7	....	2	Sh. G.	15.8
..	..	..	..	Ceres.....	5	13	96	8	....	2	Sh. G.	16.5
..	..	..	..	Reward.....	5	12	90	7	63	2	S g.	16.2
..	..	..	..	Thatcher.....	7	12	93	7	60	2	Sh.	16.2
..	..	..	..	Apex.....	5	9	93	7.5	*	2	Sh. G.	17.0
..	..	..	..	Renown.....	4	13	92	5	*	2	Sh. G.	16.2

Significant difference between varieties—(Samples incomplete).

MISS JUNE EILEEN SHARP, ROKEBY												
3C	8	2	B	Marquis.....	5	21	89	7.7	61.5	1	Sh.	14.2
..	..	..	..	Ceres.....	5	20	87	7.7	63	1	S g.	14.0
..	..	..	..	Reward.....	2	21	87	7	*	1	S g.	15.1
..	..	..	..	Thatcher.....	6	20	89	8	60.5	1	Sh.	14.6
..	..	..	..	Apex.....	6	20	87	8	61	1	Sh.	13.8
..	..	..	..	Renown.....	3	20	89	7.7	60.5	1	Sh.	14.6

No significant difference between varieties.

* Insufficient to weigh.

Wheat Pool District 8—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
JACK MATTHEWS, DUFF												
3C	8	3	A	Marquis.....	12	20	....	8.7	63.5	1	S b. Sh.	14.3
"	"	"	"	Ceres.....	14	21	....	7.7	63	1	S b. Sh.	15.2
"	"	"	"	Reward.....	12	22	....	7.3	64	1	S b. Sh.	16.6
"	"	"	"	Thatcher.....	14	20	....	8	61.5	2	B. Sh.	15.7
"	"	"	"	Apex.....	12	19	....	8	61	1	S b. Sh.	15.4
"	"	"	"	Renown.....	13	20	....	8	61.5	1	S b. Sh.	15.5

No significant difference between varieties.

JOE GULASH, JR., McKIM												
3C	8	3	B	Marquis.....	27	31	98	9.5	64	1	G.	15.5
"	"	"	"	Ceres.....	24	33	96	9	64	1	S g.	15.0
"	"	"	"	Reward.....	18	33	96	10	64	1	S g.	15.8
"	"	"	"	Thatcher.....	29	32	98	10	62	1	S b. Sh.	16.1
"	"	"	"	Apex.....	23	31	98	10	63	1	S g.	15.5
"	"	"	"	Renown.....	26	30	98	10	64	1	....	15.0

No significant difference between varieties.

HARVEY SIMION BURNARD, THEODORE												
3C	8	4	A	Marquis.....	17	....	....	10	64.5	1 Hd.	....	14.1
"	"	"	"	Ceres.....	18	....	....	10	63.5	1	B.	14.0
"	"	"	"	Reward.....	13	....	....	10	65	1	S b. G.	15.5
"	"	"	"	Thatcher.....	19	....	....	10	62	1	B.	14.7
"	"	"	"	Apex.....	16	....	....	10	65	1 Hd.	....	14.0
"	"	"	"	Renown.....	17	....	....	10	64	1	S b. Sh.	14.7

No significant difference between varieties.

DAN MATTHEW DRAPER, YORKTON												
3C	8	4	B	Marquis.....	19	30	97	10	64.5	1 Hd.	....	13.5
"	"	"	"	Ceres.....	21	30	97	10	64.5	1 Hd.	....	13.5
"	"	"	"	Reward.....	18	26	94	10	65.5	1 Hd.	....	15.1
"	"	"	"	Thatcher.....	24	30	97	10	64	1 Hd.	....	14.3
"	"	"	"	Apex.....	21	28	97	10	64	1 Hd.	....	13.6
"	"	"	"	Renown.....	18	26	94	10	64	1 Hd.	....	14.6

No significant difference between varieties.

MICHAEL OSTAFIE, MIKADO												
3B	8	5	A	Marquis.....	15	....	106	10	60.5	2	B. Sh.	15.8
"	"	"	"	Ceres.....	20	....	103	10	60	2	B. Sh.	14.9
"	"	"	"	Reward.....	12	....	103	10	61	2	B. Sh.	15.1
"	"	"	"	Thatcher.....	21	....	104	10	58	3	B. Sh.	15.7
"	"	"	"	Apex.....	20	....	104	10	61	2	B. Sh.	14.3
"	"	"	"	Renown.....	15	....	105	10	59	3	B. Sh.	15.4

Significant difference between varieties 4.28 bushels.

IAIN COWAN MACLEAN, KAMSACK												
3B	8	5	B	Marquis.....	17	22	100	10	64	1 Hd.	....	13.3
"	"	"	"	Ceres.....	18	22	94	9	65	1 Hd.	....	13.8
"	"	"	"	Reward.....	15	22	88	8	66	1 Hd.	....	15.2
"	"	"	"	Thatcher.....	19	22	91	10	63.5	1 Hd.	....	14.2
"	"	"	"	Apex.....	15	21	97	10	63.5	1 Hd.	....	13.6
"	"	"	"	Renown.....	16	22	94	10	64.5	1 Hd.	....	14.4

Significant difference between varieties 2.03 bushels.

GEORGE W. KOZORIZ, DONWELL												
3B	8	5	C	Marquis.....	22	....	97	10	64	1 Hd.	....	13.8
"	"	"	"	Ceres.....	20	....	96	8	65	1 Hd.	....	14.1
"	"	"	"	Reward.....	19	....	90	9.3	65.5	1 Hd.	....	15.0
"	"	"	"	Thatcher.....	25	....	92	10	64	1 Hd.	....	14.4
"	"	"	"	Apex.....	24	....	98	9	64	1 Hd.	....	13.5
"	"	"	"	Renown.....	24	....	96	8.7	64	1 Hd.	....	14.0

Significant difference between varieties 3.46 bushels.

WASYL P. PURA, TADMORE												
3C	8	6	A	Marquis.....	13	24	102	....	63.5	1 Hd.	....	14.2
"	"	"	"	Ceres.....	13	21	101	....	65	1 Hd.	....	14.0
"	"	"	"	Reward.....	11	20	101	....	65.5	1 Hd.	....	16.4
"	"	"	"	Thatcher.....	14	22	101	....	63.5	1 Hd.	....	14.6
"	"	"	"	Apex.....	13	21	102	....	64	1 Hd.	....	13.7
"	"	"	"	Renown.....	13	23	102	....	64	1 Hd.	....	14.9

No significant difference between varieties.

JOHN D. TRETIK, RAMA												
3C	8	7	A	Marquis.....	41	35	....	10	63.5	4	V g. I.	12.9
"	"	"	"	Ceres.....	38	33	....	9.3	64.5	3	G. I.	14.2
"	"	"	"	Reward.....	27	33	....	10	64	4	G. I.	15.3
"	"	"	"	Thatcher.....	46	32	....	10	64	4	G. I.	13.9
"	"	"	"	Apex.....	39	31	....	10	63	4	V g. I.	13.6
"	"	"	"	Renown.....	34	36	....	10	64	3	G. I.	14.1

No significant difference between varieties.

Wheat Pool District 8—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
METRO N. SAWCHUK, SHEHO												
3C	8	7	B	Marquis.....	12	....	....	10	64	2	S g.	15.4
"	"	"	"	Ceres.....	12	....	....	10	62.5	2	B. G.	16.2
"	"	"	"	Reward.....	10	....	....	10	63	2	B. G.	17.5
"	"	"	"	Thatcher.....	15	....	....	10	61	3	B. Sh.	16.2
"	"	"	"	Apex.....	13	....	....	10	62	2	B. G.	15.5
"	"	"	"	Renown.....	11	....	....	10	62.5	2	B. G.	16.0
Significant difference between varieties 2.50 bushels.												
GEORGE IRVIN LOUCKS, INVERMAY												
3C	8	7	C	Marquis.....	12	21	97	7.3	63.5	1	....	13.6
"	"	"	"	Ceres.....	13	22	96	5.7	63.5	1	S b.	13.8
"	"	"	"	Reward.....	13	23	96	7	64.5	1	S b.	15.0
"	"	"	"	Thatcher.....	13	22	97	7.3	62	1	B. Sh.	13.8
"	"	"	"	Apex.....	14	21	96	7.7	63.5	1	S b.	13.8
"	"	"	"	Renown.....	14	21	97	7.7	63.5	1	S b.	14.5
No significant difference between varieties.												
DAVID GEORGE BIRRELL, INVERMAY												
3C	8	7	D	Marquis.....	38	34	102	8	65	3	G.	13.8
"	"	"	"	Ceres.....	34	36	98	5.3	66	2	G.	14.3
"	"	"	"	Reward.....	38	33	98	8	66.5	3	G.	15.9
"	"	"	"	Thatcher.....	49	33	100	7.7	64.5	3	B. G.	15.1
"	"	"	"	Apex.....	40	33	100	8.3	65	3	G.	14.2
"	"	"	"	Renown.....	42	34	101	7.7	65	3	G.	14.6
Significant difference between varieties 6.85 bushels.												
NORMAN MEBERG, PREECEVILLE												
3C	8	8	A	Marquis.....	15	25	97	10	62	2	G. Sh.	15.4
"	"	"	"	Ceres.....	14	23	97	10	62.5	2	G. Sh.	15.8
"	"	"	"	Reward.....	13	24	95	10	65	1	G.	16.7
"	"	"	"	Thatcher.....	15	22	95	10	59.5	2	B. Sh.	17.0
"	"	"	"	Apex.....	12	21	96	10	61	2	Sh. G.	16.1
"	"	"	"	Renown.....	12	23	96	10	62.5	2	Sh. G.	16.4
No significant difference between varieties.												
FRANK E. A. TANNER, HINCHLIFFE												
4A	8	8	B	Marquis.....	36	27	94	10	65.5	2	St.	9.2
"	"	"	"	Garnet.....	36	25	81	10	66	1 C.W.	"	9.1
"	"	"	"	Reward.....	33	27	82	10	67.5	1	S st.	9.8
"	"	"	"	Thatcher.....	33	23	84	10	66	1	St.	9.2
"	"	"	"	Apex.....	35	23	86	10	66	2	St.	9.2
"	"	"	"	Renown.....	31	24	86	10	66.5	1	G. St.	9.7
No significant difference between varieties.												
MIKE E. CHEREWYK, NORQUAY												
3B	8	9	A	Marquis.....	27	28	91	10	65.5	1 Hd.	....	15.4
"	"	"	"	Ceres.....	28	26	90	10	65	1 Hd.	....	16.6
"	"	"	"	Reward.....	21	25	89	9.7	65	1 Hd.	....	18.2
"	"	"	"	Thatcher.....	30	28	90	10	64	1	....	15.8
"	"	"	"	Apex.....	26	27	90	9.3	65	1 Hd.	....	15.8
"	"	"	"	Renown.....	25	24	90	9.7	65.5	1 Hd.	....	15.7
No significant difference between varieties.												
MISS MARGARET H. M. MALCOLM, STENEN												
3B	8	9	B	Marquis.....	39	31	99	9.7	65.5	1 Hd.	....	14.7
"	"	"	"	Ceres.....	39	32	100	10	65.5	1 Hd.	....	15.1
"	"	"	"	Reward.....	32	32	93	9.3	67	1 Hd.	....	17.0
"	"	"	"	Thatcher.....	45	31	99	10	65.5	1 Hd.	....	15.2
"	"	"	"	Apex.....	39	30	100	10	65.5	1 Hd.	....	14.6
"	"	"	"	Renown.....	36	33	95	9	66.5	1 Hd.	....	15.9
Significant difference between varieties 2.78 bushels.												
NICKOLI BABUIK, NORQUAY												
3B	8	9	C	Marquis.....	35	28	101	8.3	65	2	St. G.	11.4
"	"	"	"	Ceres.....	30	27	100	8.3	64.5	2	St. G.	12.3
"	"	"	"	Reward.....	25	29	100	7.3	64	2	V st. G.	11.9
"	"	"	"	Thatcher.....	31	27	100	8.3	63	2	St. G.	11.4
"	"	"	"	Apex.....	29	28	100	8.7	65	2	St. G.	10.7
"	"	"	"	Renown.....	26	28	99	8	65	2	S g.	12.1
Significant difference between varieties 5.21 bushels.												
LOUIS EDWARD FREDERICK JOHN PILGRIM, PELLY												
3B	8	10	A	Marquis.....	4	16	89	10	63	1	....	15.1
"	"	"	"	Ceres.....	10	17	88	10	63.5	1	G. I.	16.0
"	"	"	"	Reward.....	3	15	86	10	*	1	G. I.	17.6
"	"	"	"	Thatcher.....	5	16	87	10	63	1	....	16.5
"	"	"	"	Apex.....	4	14	87	10	*	1	S g. I.	15.0
"	"	"	"	Renown.....	7	15	87	10	63	1	S i.	15.5
Significant difference between varieties 3.38 bushels.												

* Insufficient to weigh.

Wheat Pool District 8—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
PHILIP PASIEKA, ARRAN												
3B	8	10	C	Marquis.....	7	14	89	10	63	1 Hd.	....	16.0
..	Ceres.....	8	13	85	10	63	1	S b.	16.0
..	Reward.....	9	15	80	10	64	1	S g.	16.8
..	Thatcher.....	9	16	85	10	61.5	1	B.	15.3
..	Apex.....	10	15	85	10	63.5	1	S g.	15.4
..	Renown.....	9	16	85	10	63 5	1	S g.	14.8

No significant difference between varieties.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes.

3B	8	1	A	Jon Robert Egilsson, Calder.
3C	8	6	B	William Witzko, Canora.
3B	8	10	B	Stan Nimetz, Arran.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 9

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
ROBERT IVERING GILL, JASMIN												
3C	9	1	A	Marquis.....	3	15	99	10	*	1	....	14.7
..	Ceres.....	9	19	99	10	63.5	1	S g.	15.9
..	Reward.....	3	16	97	10	*	1	....	16.9
..	Thatcher.....	6	16	97	10	62	1	S g.	16.8
..	Apex.....	3	15	97	10	*	1	....	15.6
..	Renown.....	4	17	97	10	61.5	1	Sh.	15.7

Significant difference between varieties 2.90 bushels.

GEORGE TALBOT NEIL, LIPTON

3C	9	2	A	Marquis.....	5	....	....	10	62	2	B.	16.0
..	..	..	..	Ceres.....	7	....	....	10	62	2	B.	16.3
..	..	..	..	Reward.....	6	....	....	10	63	2	B. S g.	17.0
..	..	..	..	Thatcher.....	8	....	....	10	61	2	B.	16.7
..	..	..	..	Apex.....	4	....	....	10	*	2	S g.	15.8
..	..	..	..	Renown.....	6	....	....	10	62	2	B. S g.	16.2

Significant difference between varieties—(Samples incomplete).

MISS ELIZABETH RUMBALL, SOUTHEY

2B	9	3	A	Marquis.....	6	14	98	8	63	1	....	16.7
..	..	..	..	Ceres.....	7	15	94	7	62.5	1	Sh.	16.8
..	..	..	..	Reward.....	5	12	97	6	61.5	1	S b.	18.4
..	..	..	..	Thatcher.....	7	14	94	8	61	1	S b.	17.0
..	..	..	..	Apex.....	6	14	98	8.7	62	1	....	16.9
..	..	..	..	Renown.....	6	14	94	6.7	61	1	....	17.4

Significant difference between varieties .93 bushels.

HOWARD JAMES MORTON, GIBBS

2B	9	4	B	Marquis.....	11	17	95	10	63	1	....	15.9
..	..	..	..	Ceres.....	9	17	94	8	64	1 Hd.	....	16.6
..	..	..	..	Reward.....	6	17	85	10	64	1	S g.	18.5
..	..	..	..	Thatcher.....	10	17	92	10	61.5	1	S b.	17.2
..	..	..	..	Apex.....	10	16	92	9.7	63	1	S g.	15.8
..	..	..	..	Renown.....	10	18	90	10	63.5	1	....	17.2

No significant difference between varieties.

HAROLD SORTEBERG, GOVAN

2B	9	6	A	Marquis.....	2	....	....	10	*	1	S b.	15.8
..	..	..	..	Ceres.....	4	....	....	10	61	2	B.	15.9
..	..	..	..	Reward.....	3	....	....	10	*	2	B.	18.1
..	..	..	..	Thatcher.....	3	....	....	10	60.5	2	B.	16.1
..	..	..	..	Apex.....	3	....	....	10	*	2	B.	16.4
..	..	..	..	Renown.....	3	....	....	10	61	2	B.	16.6

No significant difference between varieties.

WILLIAM ROBERT POPE, DRAKE

2B	9	6	B	Marquis.....	1	12	90	5	*	2	G. Sh.	....
..	..	..	..	Ceres.....	1	12	86	5	*	1	Sh.	....
..	..	..	..	Reward.....	1	12	86	5	*	2	G. Sh.	....
..	..	..	..	Thatcher.....	2	14	87	5.7	*	2	B. Sh.	....
..	..	..	..	Apex.....	2	12	87	5	*	2	G. Sh.	....
..	..	..	..	Renown.....	2	12	86	5	*	2	G. Sh.	....

No significant difference between varieties.

* Insufficient to weigh.

Wheat Pool District 9—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
LLOYD MURRAY, SEMANS												
2B	9	7	B	Marquis.....	10	24	79	10	62	1	S g.	14.9
"	"	"	"	Ceres.....	17	24	77	8.7	63	1	S g.	15.2
"	"	"	"	Reward.....	8	25	73	10	63.5	1	S g.	16.4
"	"	"	"	Thatcher.....	16	23	78	10	61	1	S b. Sh.	15.1
"	"	"	"	Apex.....	14	24	79	9.7	61.5	1	S b.	14.5
"	"	"	"	Renown.....	9	23	79	10	62	1	S b. G.	15.3

Significant difference between varieties 5.35 bushels.

LEONARD GEORGE BOLT, DAFOE												
2B	9	8	B	Marquis.....	11	....	....	....	63	2	S g.	17.0
"	"	"	"	Ceres.....	12	....	....	....	62	2	S g.	16.9
"	"	"	"	Reward.....	10	....	....	....	63	2	S g.	18.1
"	"	"	"	Thatcher.....	13	....	....	....	59	2	....	18.3
"	"	"	"	Apex.....	10	....	....	....	61	2	S b. G.	17.5
"	"	"	"	Renown.....	11	....	....	....	60.5	2	S b. G.	17.8

No significant difference between varieties.

MISS EDITH LILLIAN VIRGIN, FOAM LAKE												
3C	9	9	A	Marquis.....	11	....	96	10	64.5	1 Hd.	....	14.2
"	"	"	"	Ceres.....	12	....	92	8	64	1 Hd.	....	14.8
"	"	"	"	Reward.....	4	....	89	6.7	65	1 Hd.	....	17.3
"	"	"	"	Thatcher.....	11	....	92	10	63.5	1	S b.	15.5
"	"	"	"	Apex.....	11	....	93	9.3	64	1 Hd.	....	15.0
"	"	"	"	Renown.....	9	....	93	9.3	63.5	1 Hd.	....	15.2

Significant difference between varieties 2.52 bushels.

EWEN MILNE BEATTIE, FOAM LAKE												
3C	9	9	B	Marquis.....	19	....	....	10	63	1	Sh. G.	16.3
"	"	"	"	Ceres.....	17	....	....	10	62.5	1	S b. G.	16.2
"	"	"	"	Reward.....	17	....	....	10	63.5	1	Sh. G.	16.8
"	"	"	"	Thatcher.....	21	....	....	10	60.5	2	B. Sh.	16.9
"	"	"	"	Apex.....	18	....	....	10	62	1	Sh. G.	16.2
"	"	"	"	Renown.....	18	....	....	10	62	1	Sh. G.	16.8

No significant difference between varieties.

HAROLD HORNFORD, ELFROS												
3C	9	10	B	Marquis.....	7	....	84	....	62.5	2	S g.	15.5
"	"	"	"	Ceres.....	7	....	77	....	61	3	G. Sh.	14.5
"	"	"	"	Reward.....	8	....	77	....	63	4	V g.	15.6
"	"	"	"	Thatcher.....	8	....	77	....	58	4	B. Sh. G.	15.7
"	"	"	"	Apex.....	7	....	84	....	60	3	Mxd. H.	15.7
"	"	"	"	Renown.....	7	....	77	....	60	4	V g.	15.3

No significant difference between varieties.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes.

3C 9 1 B	William Gray, Ituna.	2B 9 2 B	Donald Roland Brown, Cupar.
3C 9 3 B	Miss Victoria Lazar, Lestock.	2B 9 4 A	Lloyd E. B. Nixon, Earl Grey.
2B 9 5 A	Robert Leith Ross, Cymric.	2B 9 5 B	Robert G. Martin, Govan.
3C 9 7 A	Fred Lowenberger, Raymore.	3C 9 8 A	Gustave Nerenberg, Jansen.
3C 9 10 A	Joe Helgason, Foam Lake.		

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 10

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
ROBERT S. LESLIE, AYLESBURY												
2B	10	1	A	Marquis.....	2	12	96	9.7	....	2	S b.	16.7
"	"	"	"	Ceres.....	3	13	94	9.7	....	2	B.	16.4
"	"	"	"	Reward.....	2	11	94	9.7	....	2	B.	17.7
"	"	"	"	Thatcher.....	2	14	92	9.7	....	2	B.	17.3
"	"	"	"	Apex.....	1	11	94	10	....	2	B.	16.7
"	"	"	"	Renown.....	2	13	93	10	....	2	Sh. B.	17.7

Significant difference between varieties .62 bushels.

CLAYTON EDGARSON McWILLIAMS, HOLDFAST												
2B	10	1	B	Marquis.....	3	....	....	....	62.5	1	Sh.	17.3
"	"	"	"	Ceres.....	4	....	....	....	61.5	2	Sh. G.	....
"	"	"	"	Reward.....	4	....	....	....	60.5	1	S g.	18.6
"	"	"	"	Thatcher.....	4	....	....	....	58	2	Sh. B.	18.3
"	"	"	"	Apex.....	5	....	....	....	61	2	Sh. G.	17.4
"	"	"	"	Renown.....	4	....	....	....	60	2	Sh. G.	18.0

No significant difference between varieties.

* Insufficient to weigh.

Wheat Pool District 10—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
L. D. W. COOPER, TUGASKE												
1	10	2	A	Marquis.....	2	13	94	8	*	1	S g.	15.1
..	Reliance.....	2	13	94	8	*	1	S g.	15.4
..	Reward.....	3	13	94	8.3	*	1	S g.	17.8
..	Thatcher.....	3	13	94	8	*	2	B. Sh.	16.8
..	Apex.....	2	13	94	7	*	1	....	15.7
..	Renown.....	2	13	94	8.7	*	1	....	16.5

No significant difference between varieties.

HARLAN THOMAS EWING, WISETON												
1	10	4	A	Marquis.....	....	14	....	10	....	..	....	....
..	..	..	..	Reliance.....	....	13	....	9	....	..	....	....
..	..	..	..	Reward.....	....	13	....	9	....	..	....	....
..	..	..	..	Thatcher.....	....	15	....	9	....	..	....	....
..	..	..	..	Apex.....	....	15	....	9	....	..	....	....
..	..	..	..	Renown.....	....	14	....	10	....	..	....	....

Significant difference between varieties—(No samples received).

PHILIP DUNCAN WENSLEY, WISETON												
2B	10	4	B	Marquis.....	12	17	98	8	63.5	1 Hd.	....	14.5
..	..	..	..	Ceres.....	12	16	94	8	63	1 Hd.	....	15.7
..	..	..	..	Reward.....	7	15	93	8	64	1 Hd.	....	15.9
..	..	..	..	Thatcher.....	11	17	97	8	62.5	1	Sh. B.	15.4
..	..	..	..	Apex.....	11	17	95	8	64	1 Hd.	....	14.2
..	..	..	..	Renown.....	8	16	94	8	63	1	....	16.0

Significant difference between varieties .96 bushels.

ERNEST A. DODDS, DAVIDSON												
2B	10	7	B	Marquis.....	5	18	101	9.3	64	1 Hd.	....	14.6
..	..	..	..	Ceres.....	6	13	96	8.3	63	1 Hd.	....	15.3
..	..	..	..	Reward.....	7	14	89	9.3	64.5	1 Hd.	....	16.5
..	..	..	..	Thatcher.....	8	15	89	8.3	62.5	1 Hd.	....	15.2
..	..	..	..	Apex.....	5	15	100	9	63.5	1 Hd.	....	14.5
..	..	..	..	Renown.....	9	15	96	9.3	64	1 Hd.	....	15.3

No significant difference between varieties.

HUGH ALLOTT KIRTON, WATROUS												
2B	10	8	A	Marquis.....	10	....	....	....	62	2	S g.	16.2
..	..	..	..	Ceres.....	9	....	....	....	59.5	2	B.	16.7
..	..	..	..	Reward.....	6	....	....	....	62	2	S g.	17.3
..	..	..	..	Thatcher.....	10	....	....	....	57	3	B.	17.5
..	..	..	..	Apex.....	10	....	....	....	58.5	2	B.	16.7
..	..	..	..	Renown.....	8	....	....	....	60	2	B.	17.0

Significant difference between varieties 1.66 bushels.

RAYMOND WILLIAM BUSCHE, IMPERIAL												
2B	10	8	B	Marquis.....	10	....	....	....	63	1	S b.	15.5
..	..	..	..	Ceres.....	12	....	....	....	63.5	1	S b.	14.5
..	..	..	..	Reward.....	10	....	....	....	64	1	S g.	16.1
..	..	..	..	Thatcher.....	12	....	....	....	62	1	B.	14.9
..	..	..	..	Apex.....	7	....	....	....	62	1	B.	14.4
..	..	..	..	Renown.....	6	....	....	....	62.5	1	S b.	15.2

Significant difference between varieties 3.54 bushels.

DAVID CHRISTOPHER McRAE, HANLEY												
2B	10	9	B	Marquis.....	10	19	94	5.7	64.5	1 Hd.	....	13.0
..	..	..	..	Ceres.....	....	18	91	5.7	....	..	....	....
..	..	..	..	Reward.....	6	19	92	5.7	65	1 Hd.	....	15.5
..	..	..	..	Thatcher.....	8	20	93	7.3	63	1 Hd.	....	14.4
..	..	..	..	Apex.....	7	19	94	7	64	1 Hd.	....	13.7
..	..	..	..	Renown.....	6	19	94	7	64	1	S g.	14.4

Significant difference between varieties—(Samples incomplete).

* Insufficient to weigh.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes.

1	10	2	B	Richard Samuel Jackson, Riverhurst.	1	10	3	A	Fred Charles Moynham, Demaine.
1	10	3	B	Otto Brown, Demaine.	1	10	5	A	Kenneth George Fisher, Birsay.
2B	10	5	B	Mervin Earl Bell, Conquest.	2B	10	6	A	Norman Arnold Tastad, Loreburn.
2B	10	6	B	Burton Oliver Berg, Outlook.	2B	10	7	A	John R. McJannet, Davidson.
2B	10	9	A	Elmer Catton, Hanley.	2B	10	10	A	Lloyd George Schumacher, Donavon.
2B	10	10	B	Stanley William Jacob Wilson, Ardath.					

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 11

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
ELMER LESLEY BROWN, HUCHTON												
2B	11	2	A	Marquis.....	4	9	112	8.7	62	3	B. G.	16.6
"	"	"	"	Ceres.....	4	9	114	8.7	62	3	B. G.	17.5
"	"	"	"	Reward.....	3	8	117	8.7	*	3	B. G.	19.1
"	"	"	"	Thatcher.....	4	9	120	8.7	61.5	3	B. G.	17.2
"	"	"	"	Apex.....	4	8	116	8.5	60.5	3	B. G.	16.6
"	"	"	"	Renown.....	5	10	123	9.2	61.5	3	B. G.	17.0
Significant difference between varieties .90 bushels.												

WILLIAM ALFRED EVANS, RICHLEA												
1	11	3	A	Marquis.....	7	13	....	9.7	62	2	S p. Sh. G.	15.1
"	"	"	"	Reliance.....	9	15	....	10	63	3	P. Sh. G.	14.5
"	"	"	"	Reward.....	3	12	....	9	62.5	3	G. I.	16.8
"	"	"	"	Thatcher.....	7	13	....	9.3	61	2	S p. Sh. G.	15.3
"	"	"	"	Apex.....	6	13	....	9.7	61	2	S p. Sh. G.	15.6
"	"	"	"	Renown.....	5	13	....	9	61.5	2	S g.	15.7
Significant difference between varieties 3.02 bushels.												

WILLIAM KENNETH SCHMIDT, KINDERSLEY												
1	11	6	B	Marquis.....	4	12	124	7.7	63	1 Hd.	....	14.6
"	"	"	"	Reliance.....	5	11	121	8	65	1	S g.	14.0
"	"	"	"	Reward.....	3	12	108	8.7	64	1	S g.	16.8
"	"	"	"	Thatcher.....	3	15	114	9	*	1	S b.	15.3
"	"	"	"	Apex.....	4	9	121	8.7	63	1 Hd.	S g.	14.1
"	"	"	"	Renown.....	2	8	121	8.7	*	1	S g.	16.0
No significant difference between varieties.												

PHILIP ROSS JAVENS, ROSETOWN												
2B	11	7	A	Marquis.....	11	16	101	10	65	1 Hd.	....	15.7
"	"	"	"	Ceres.....	10	14	92	9.3	64	1	S g.	15.9
"	"	"	"	Reward.....	7	14	95	9.3	65	1	S g.	17.8
"	"	"	"	Thatcher.....	12	15	97	9.3	64	1	S b.	15.7
"	"	"	"	Apex.....	11	15	98	10	64.5	1 Hd.	....	15.2
"	"	"	"	Renown.....	9	15	99	9.3	64.5	1	S g.	16.2
Significant difference between varieties 2.18 bushels.												

WILLIAM S. POWELL, ROSETOWN												
2B	11	7	B	Marquis.....	....	17	114	9	62	2	G.	15.0
"	"	"	"	Ceres.....	....	15	114	8	63	2	G.	15.8
"	"	"	"	Reward.....	....	14	114	9	64	2	G.	16.6
"	"	"	"	Thatcher.....	....	15	114	9	63	2	B.	15.5
"	"	"	"	Apex.....	....	16	114	9	63.5	2	G.	15.1
"	"	"	"	Renown.....	....	16	114	9	64	2	S g.	15.9
Significant difference between varieties—(Samples incomplete).												

JAMES WILFRED FORREST, ANGLIA												
2B	11	8	A	Marquis.....	2	10	108	10	*	1	S g.	14.7
"	"	"	"	Ceres.....	7	10	104	10	62.5	1	S b p.	15.3
"	"	"	"	Reward.....	6	10	104	10	64	1	S g.	16.5
"	"	"	"	Thatcher.....	5	9	106	10	63	1	S b.	15.1
"	"	"	"	Apex.....	5	10	106	10	62.5	1	S b p.	14.5
"	"	"	"	Renown.....	4	10	105	10	63	1	S b.	15.4
No significant difference between varieties.												

DANIEL ALBIN OLSON, PLENTY												
1	11	9	B	Marquis.....	2	8	110	8.7	*	1	S g.	16.3
"	"	"	"	Reliance.....	2	7	109	8.7	*	1	Sh.	16.6
"	"	"	"	Reward.....	1	7	109	7.3	*	†	....	18.8
"	"	"	"	Thatcher.....	2	7	110	8.7	*	1	Sh. S g.	16.8
"	"	"	"	Apex.....	2	7	109	8.3	*	1	Sh. G.	16.2
"	"	"	"	Renown.....	1	8	110	8.7	*	1	S g.	16.9
No significant difference between varieties.												

EARL NAFFZIGER, SMILEY												
1	11	10	A	Marquis.....	14	18	110	9	62.5	1	S g.	12.6
"	"	"	"	Ceres.....	13	14	108	7	64.5	1 Hd.	....	13.2
"	"	"	"	Reward.....	10	14	103	7	63	1	G.	14.8
"	"	"	"	Thatcher.....	13	15	110	9	63	1	G.	13.8
"	"	"	"	Apex.....	15	15	110	8	63	1	S g.	12.8
"	"	"	"	Renown.....	12	15	110	8	63.5	1	S g.	14.3
Significant difference between varieties 1.37 bushels.												

* Insufficient to weigh.

† Insufficient to grade.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes.

1	11	1	A	Victor Arthur Baker, Kyle.	1	11	1	B	Gordon Oswald Prime, Kyle.
1	11	2	B	Alexander M. Douglas, Greenan.	1	11	3	B	James Charles Kellington, Snipe Lake.
1	11	4	A	Dyson Revitt, Jr., Eyre.	1	11	4	B	William Robert Bennett, Eatonla.
1	11	5	A	Harvey Lorne Sutherland, Marengo.	1	11	5	B	Sheldon Lewis Elliott, Flaxcombe.
1	11	6	A	Raymond Harold Fuhrmann, Netherhill.	1	11	8	B	George Earl Wilson, Herschel.
1	11	9	A	Clive William Jenn, Dodsland.	1	11	10	B	William Ellis Jamieson, Fusilier.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 12

Cereal variety zone	Dist.	Sub- dist.	Test desig- nation	Varieties	Yield bus. per acre	Plant height in inches	Days seed- ing to ripe	Straw strength	Pounds per measured bushel	Commer- cial grades	Grading remarks	Protein content in per- centage
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HUGH ALBERT RIDDELL, SPRINGWATER

2B	12	1	A	Marquis.....	3	11	9	*	2	G.	16.3
..	Ceres.....	4	14	9	*	2	B. G.	16.2
..	..	..	..	Reward.....	1	11	....	6.5	*	2	B. G.	18.6
..	..	..	..	Thatcher....	4	6	....	8.7	*	2	B. G.	18.7
..	..	..	..	Apex.....	3	12	....	5.7	*	2	B. G.	16.3
..	..	..	..	Renown.....	1	8	....	8	*	2	B. G.	17.0

Significant difference between varieties 1.43 bushels.

JAMES PETER SANDERS, SALTER

2B	12	2	A	Marquis.....	7	16	102	10	64	1	S g.	16.1
..	..	..	..	Ceres.....	7	14	100	9	64.5	1	S g.	16.5
..	..	..	..	Reward.....	5	16	97	10	64	1	S g.	17.1
..	..	..	..	Thatcher....	9	17	97	10	63	1	S b.	16.0
..	..	..	..	Apex.....	7	15	101	10	64	1	S b. G.	15.5
..	..	..	..	Renown.....	5	14	98	10	63	1	S g.	17.8

No significant difference between varieties.

STANLEY FREWEN, BALJENNIE

3E	12	2	B	Marquis.....	....	....	....	9.3	....	..	....	....
..	..	..	..	Garnet.....	2	11	87	10	*	1	C.W. S g.	18.9
..	..	..	..	Reward.....	4	13	88	10	63	1	S g.	19.4
..	..	..	..	Thatcher....	3	10	88	10	*	1	S b.	18.5
..	..	..	..	Apex.....	6	10	94	....	*	1	S g.	17.5
..	..	..	..	Renown.....	3	11	....	10	*	1	S g.	18.3

Significant difference between varieties—(Samples incomplete).

ROBERT BURKE, LUSELAND

2B	12	4	A	Marquis.....	....	16	99	10	63.5	1	S g.	13.9
..	..	..	..	Ceres.....	....	15	97	9	64	1	S g.	14.0
..	..	..	..	Reward.....	....	14	98	8.3	*	1	S g.	17.1
..	..	..	..	Thatcher....	....	16	98	9.3	62.5	1	S b. G.	15.2
..	..	..	..	Apex.....	....	16	101	9.7	64	1	S g.	14.0
..	..	..	..	Renown.....	....	14	99	8	*	1	S g.	15.7

Significant difference between varieties—(Heavy grasshopper damage. Yields discarded).

GLENN F. SCHLOSSER, KERROBERT

1	12	4	B	Marquis.....	15	....	....	10	66	1	Hd.	13.9
..	..	..	..	Reliance....	15	....	....	10	66	1	Hd.	14.8
..	..	..	..	Reward.....	13	....	....	9.3	66	1	Hd.	16.1
..	..	..	..	Thatcher....	13	....	....	9.3	64.5	1	Hd.	14.9
..	..	..	..	Apex.....	13	....	....	9.6	64.5	1	Hd.	14.3
..	..	..	..	Renown.....	11	....	....	9.3	64	1	Hd.	15.7

Significant difference between varieties 2.4 bushels.

EARL EVERIT RICHARDS, TAKO

2B	12	5	A	Marquis.....	12	30	110	10	64	4	V g.	15.2
..	..	..	..	Ceres.....	11	24	105	10	63	3	G.	15.0
..	..	..	..	Reward.....	9	19	103	10	64.5	3	S b. G.	16.3
..	..	..	..	Thatcher....	11	20	103	10	63.5	3	S b. G.	15.8
..	..	..	..	Apex.....	14	22	107	10	63	3	G.	15.2
..	..	..	..	Renown.....	9	23	107	10	64	2	S g.	16.3

Significant difference between varieties 1.79 bushels.

JAMES J. ZUNTI, LUSELAND

2B	12	5	B	Marquis.....	1	....	111	8.7	*	1	S g.	15.9
..	..	..	..	Ceres.....	3	....	112	8.7	*	1	S g.	17.5
..	..	..	..	Reward.....	1	....	110	8	*	1	G.	18.5
..	..	..	..	Thatcher....	3	....	109	9	63	1	S g.	16.0
..	..	..	..	Apex.....	3	....	112	8.7	*	1	S g.	15.7
..	..	..	..	Renown.....	1	....	110	8	*	1	S g.	16.5

No significant difference between varieties.

WALTER RAYMOND NELSON, VERA

2B	12	7	A	Marquis.....	3	10	103	10	*	1	G.	15.2
..	..	..	..	Ceres.....	1	8	103	9	*	2	B. G.	16.8
..	..	..	..	Reward.....	1	8	101	10	*	2	B. G.	18.6
..	..	..	..	Thatcher....	2	10	101	10	*	2	B. G.	16.5
..	..	..	..	Apex.....	2	10	102	10	*	1	G.	16.2
..	..	..	..	Renown.....	2	9	101	9.7	*	2	B. G.	17.3

Significant difference between varieties .88 bushels.

BERT R. WELLS, MARSDEN

3E	12	8	A	Marquis.....	9	16	96	9.7	62	4	G. F.	15.9
..	..	..	..	Ceres.....	7	14	93	9.7	62	3	G. F.	16.7
..	..	..	..	Reward.....	6	16	90	9.7	64	3	G. F.	17.2
..	..	..	..	Thatcher....	9	15	92	10	62.5	3	G. F.	16.3
..	..	..	..	Apex.....	6	12	95	10	61.5	3	G.	16.5
..	..	..	..	Renown.....	7	14	93	10	62	3	G. F.	17.3

No significant difference between varieties.

* Insufficient to weigh.

Wheat Pool District 12—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
CLEMENT COLLINS WAKEFIELD, LILYDALE												
3E	12	8	B	Marquis.....	18	17	88	10	65	4	V g.	16.2
"	"	"	"	Garnet.....	22	21	79	7.7	63.5	1 C.W.	"	15.6
"	"	"	"	Reward.....	20	20	83	9.3	66	1	S g.	17.5
"	"	"	"	Thatcher.....	29	20	87	8.3	64	4	V g.	16.0
"	"	"	"	Apex.....	26	19	87	10	65	2	G.	15.7
"	"	"	"	Renown.....	17	20	83	9.7	64	3	G.	16.7
Significant difference between varieties 6.37 bushels.												

ELLSWORTH BINGHAM WOODWARD, TATSFIELD												
3E	12	9	A	Marquis.....	5	....	....	....	63	2	B. G.	16.1
"	"	"	"	Garnet.....	5	....	....	....	61.5	3	B. G.	16.7
"	"	"	"	Reward.....	5	....	....	....	63	2	G.	17.4
"	"	"	"	Thatcher.....	9	....	....	....	60.5	3	B. Sh. G.	15.6
"	"	"	"	Apex.....	6	....	....	....	62	3	B. G.	15.2
"	"	"	"	Renown.....	6	....	....	....	62.5	3	B. G.	16.3
No significant difference between varieties.												

GERARD WILLIAM WEHRHAHN, ROCKHAVEN												
2B	12	9	B	Marquis.....	3	12	96	6.7	*	1	S b. G.	16.1
"	"	"	"	Ceres.....	4	11	97	5.3	63	1	S b. G.	17.0
"	"	"	"	Reward.....	2	12	97	5.7	*	1	S b. G.	17.1
"	"	"	"	Thatcher.....	4	11	97	5.7	63	1	S b.	15.2
"	"	"	"	Apex.....	5	12	95	7.3	63.5	1	S b. G.	15.0
"	"	"	"	Renown.....	4	13	99	6.3	63	1	S g.	16.6
No significant difference between varieties. * Insufficient to weigh.												

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

2B 12 1 B	Glenn Carrol Lindgren, Biggar.	2B 12 1 C	Rodrick Russell McLeod, Springwater.
2B 12 3 A	Miss Grace D. Smith, R.R. 2, Wilkie.	2B 12 3 B	Nellis Arthur Sinclair, Wolfe.
2B 12 6 A	Robert C. Thompson, Cactus Lake.	2B 12 6 B	Sheldon N. Townsend, Macklin.
2B 12 7 B	Stewart Alderson Wells, Senlac.	3E 12 10 A	William J. Bridge, R.R. 2, Battleford.
3E 12 10 B	Bruce Evans Smith, Battleford.		

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 13

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
HAROLD WHITEHEAD, VISCOUNT												
2B	13	1	A	Marquis.....	8	18	112	9.3	62	2	B. G.	15.0
"	"	"	"	Ceres.....	7	17	109	8.3	62	2	B. S g.	15.6
"	"	"	"	Reward.....	5	14	107	9.3	64	1	B. S g.	16.7
"	"	"	"	Thatcher.....	8	16	106	9	60	2	G.	16.7
"	"	"	"	Apex.....	6	14	109	9.7	62	1	S g.	15.5
"	"	"	"	Renown.....	6	15	107	9	62.5	1	S g.	16.0
Significant difference between varieties .60 bushels.												

ALFRED BRUCE CONN, ABERDEEN												
2B	13	7	A	Marquis.....	8	....	....	7.3	63	1	S g.	14.3
"	"	"	"	Ceres.....	7	....	....	7	63	1	S g.	15.6
"	"	"	"	Reward.....	3	....	....	7	63	1	S g.	16.6
"	"	"	"	Thatcher.....	5	....	....	7	61	1	B.	14.8
"	"	"	"	Apex.....	3	....	....	7	*	1	S g.	15.0
"	"	"	"	Renown.....	3	....	....	7	*	1	S g.	15.7
Significant difference between varieties 2.40 bushels.												

NORMAN GARFIELD HUFFMAN, ABERDEEN												
2B	13	7	B	Marquis.....	4	18	....	....	62.5	1	S g.	15.4
"	"	"	"	Ceres.....	6	17	....	....	63	1	S g.	15.7
"	"	"	"	Reward.....	1	16	....	....	*	1	S g.	17.0
"	"	"	"	Thatcher.....	4	16	....	....	*	1	S b.	15.2
"	"	"	"	Apex.....	3	16	....	....	*	1	S g.	14.9
"	"	"	"	Renown.....	2	16	....	....	*	1	S g.	15.9
Significant difference between varieties 1.55 bushels.												

J. E. BLAIN, PRUD'HOMME												
2B	13	8	A	Marquis.....	1	12	77	8	*	3	B. Sh. G.	16.3
"	"	"	"	Ceres.....	4	13	79	7.7	60	2	B. G.	16.9
"	"	"	"	Reward.....	2	12	78	9	*	3	B. Sh. G.	17.9
"	"	"	"	Thatcher.....	4	12	78	9	58	3	B.	16.7
"	"	"	"	Apex.....	2	11	77	9	*	3	B. G.	16.2
"	"	"	"	Renown.....	3	12	78	9.3	*	3	B. G.	16.9
Significant difference between varieties 1.61 bushels.												

* Insufficient to weigh.

Wheat Pool District 13—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
SLAWKO G. KINDRACHUK, ST. JULIEN												
3E	13	9	A	Marquis.....	10	....	....	....	64	1	S g.	16.9
..	Garnet.....	8	....	....	....	60	2 C.W.	B. Sh.	17.9
..	Reward.....	8	....	....	....	64.5	1	S g.	17.5
..	Thatcher....	11	....	....	....	63	1	S b.	16.6
..	Apex.....	18	....	....	....	65	1	S b.	15.7
..	Renown.....	17	....	....	....	64	1	S g.	16.7

Significant difference between varieties 4.38 bushels.

JOHN WASYL LUCIUK, WAKAW												
3E	13	9	B	Marquis.....	7	....	....	....	62.5	1	S g.	16.0
..	..	..	..	Garnet.....	7	....	....	....	60.5	2 C.W.	Sh. G.	16.6
..	..	..	..	Reward.....	7	....	....	....	64	1	S g.	17.1
..	..	..	..	Thatcher....	9	....	....	....	62	1	S b. Sh.	17.5
..	..	..	..	Apex.....	8	....	....	....	62.5	1	S g.	16.1
..	..	..	..	Renown.....	6	....	....	....	62	1	S g.	17.0

No significant difference between varieties.

GEORGE M. BECKER, CARMEL												
3C	13	10	A	Marquis.....	12	19	....	9	63.5	1	S g.	15.1
..	..	..	..	Ceres.....	14	19	....	7.7	64	1	S g.	15.5
..	..	..	..	Reward.....	12	20	....	8	65	1	S g.	16.7
..	..	..	..	Thatcher....	15	20	....	9	62	1	S b.	16.0
..	..	..	..	Apex.....	14	19	....	9	63	1	S b.	15.4
..	..	..	..	Renown.....	14	19	....	8.7	63.5	1	S g.	16.1

No significant difference between varieties.

WALTER HEIDECKER, MIDDLE LAKE												
4A	13	10	B	Marquis.....	28	31	98	10	65	Rej. 3	Mxd. H. My.	10.6
..	..	..	..	Garnet.....	26	32	88	10	64	1 C.W.	....	11.5
..	..	..	..	Reward.....	20	30	93	10	66	1 Hd.	....	12.8
..	..	..	..	Thatcher....	29	29	97	10	64.5	Rej. 2	Mxd. H.	10.9
..	..	..	..	Apex.....	30	31	96	10	64	Rej. 2	Mxd. H.	11.3
..	..	..	..	Renown.....	25	31	96	10	65	Rej. 2	Mxd. H.	11.2

Significant difference between varieties 4.63 bushels.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

2B 13 1 B	Thomas Noel Crane, Guernsey.	2B 13 2 A	Reay Roddick, Colonsay.
2B 13 2 B	Harry Benton, Watrous.	2B 13 3 A	William George Bitz, Allan.
2B 13 3 B	Charles Horton H. Hokanson, Dundurn.	2B 13 4 A	Stuart Black, Bradwell.
2B 13 4 B	Walter Thos. Magill, R.R. 5, Saskatoon.	2B 13 5 A	Fred L. Waldner, Langham.
2B 13 5 B	John Harvey Gwynne Smith, Delisle.	2B 13 6 A	James Grant Miller, Leney.
2B 13 6 B	Walter Harvey Ferguson, Sonningdale.	2B 13 8 B	Anthony Hilary La Brash, Totzke.

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 14

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
JAMES SMITH, LINTLAW												
4A	14	1	A	Marquis.....	37	37	100	10	65.5	1 Hd.	....	14.9
..	Garnet.....	35	40	82	10	63.5	1 C.W.	..	14.4
..	Reward.....	29	36	91	10	66.5	1 Hd.	....	15.9
..	Thatcher....	39	36	91	10	65	1 Hd.	....	14.9
..	Apex.....	44	38	100	10	65	1 Hd.	S g.	14.2
..	Renown.....	37	38	100	10	65.5	1 Hd.	....	15.1

No significant difference between varieties.

WALTER K. FORD, KELVINGTON												
3C	14	1	B	Marquis.....	29	30	108	9.2	64.5	1 Hd.	....	11.7
..	..	..	..	Ceres.....	28	29	107	9.2	64	1	S g.	12.7
..	..	..	..	Reward.....	21	27	104	9.2	66	1	S g.	13.3
..	..	..	..	Thatcher....	30	28	109	9.7	63	1	S b.	12.4
..	..	..	..	Apex.....	31	28	108	9.5	64	1 Hd.	....	12.2
..	..	..	..	Renown.....	26	30	105	9.5	64.5	1	S g.	12.8

Significant difference between varieties 3.26 bushels.

BERT OTTO ANDERSON, HENDON												
3C	14	2	A	Marquis.....	34	33	89	9.7	64	1 Hd.	....	14.2
..	..	..	..	Ceres.....	33	32	81	7.3	63.5	3	Sp.	15.0
..	..	..	..	Reward.....	24	32	79	8.3	64	3	Sp.	16.6
..	..	..	..	Thatcher....	33	32	87	8.7	63	1	S b.	15.0
..	..	..	..	Apex.....	31	32	86	9	63.5	1 Hd.	....	14.1
..	..	..	..	Renown.....	26	29	81	7.8	63.5	1 Hd.	....	14.9

No significant difference between varieties.

Wheat Pool District 14—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
OLE E. LAXDAL, KUROKI												
3C	14	2	B	Marquis.....	21	27	93	10	64	1	S g.	14.9
"	"	"	"	Ceres.....	22	26	91	8.7	63.5	1	S b. G.	14.9
"	"	"	"	Reward.....	18	28	90	9	65	1	S g.	15.8
"	"	"	"	Thatcher.....	28	29	93	9	62	2	B. Sh.	15.1
"	"	"	"	Apex.....	26	28	92	9	63	1	B. G.	14.5
"	"	"	"	Renown.....	23	29	93	8.3	64	1	B. G.	15.3
No significant difference between varieties.												
JAMES RICHARD HARCOURT, LEROY												
3C	14	3	A	Marquis.....	11	....	....	8	64	2	G.	15.3
"	"	"	"	Ceres.....	11	....	....	8	64.5	1	S g.	15.6
"	"	"	"	Reward.....	9	....	....	8	65	1	S g.	16.8
"	"	"	"	Thatcher.....	12	....	....	8	62	1	S b. G.	14.9
"	"	"	"	Apex.....	11	....	....	8	63	2	G.	15.5
"	"	"	"	Renown.....	10	....	....	8.7	63.5	1	G.	15.5
Significant difference between varieties 1.00 bushel.												
MAX PUTNAM, WATSON												
3C	14	3	B	Marquis.....	7	....	....	10	64	2	V g.	17.0
"	"	"	"	Ceres.....	8	....	....	10	62.5	2	B. G.	16.3
"	"	"	"	Reward.....	9	....	....	10	61	3	B. V g. Sh.	17.3
"	"	"	"	Thatcher.....	10	....	....	10	58	3	B. Sh.	16.3
"	"	"	"	Apex.....	8	....	....	10	61	3	B. G.	17.4
"	"	"	"	Renown.....	8	....	....	10	61	2	B. G.	16.1
Significant difference between varieties 1.41 bushels.												
MARK RICHARD KILCHER, DAYLESFORD												
3C	14	4	A	Marquis.....	20	....	....	9.3	64	1	G.	14.1
"	"	"	"	Ceres.....	24	....	....	9.6	63.5	1	S g.	14.8
"	"	"	"	Reward.....	15	....	....	9.3	65	1	G.	16.6
"	"	"	"	Thatcher.....	21	....	....	8.7	63	1	S b.	15.2
"	"	"	"	Apex.....	20	....	....	8.7	64	1	G.	15.3
"	"	"	"	Renown.....	13	....	....	8.7	62.5	1	Sh. G.	16.0
No significant difference between varieties.												
TONY MESCHISHNICK, ST. GREGOR												
3C	14	4	B	Marquis.....	9	....	....	8	63	2	G.	17.3
"	"	"	"	Ceres.....	7	....	....	8	62	2	B. G.	17.8
"	"	"	"	Reward.....	6	....	....	8	62	3	G.	18.4
"	"	"	"	Thatcher.....	9	....	....	8	60.5	3	B. G.	17.3
"	"	"	"	Apex.....	8	....	....	8	62	2	S b. G.	17.4
"	"	"	"	Renown.....	11	....	....	8	62	3	G.	16.9
No significant difference between varieties.												
ROBERT JOHN HUTCHISON, SPALDING												
3C	14	5	A	Marquis.....	13	....	....	9.7	63	1	S b.	14.4
"	"	"	"	Ceres.....	15	....	....	9.3	63	1	Sh.	14.5
"	"	"	"	Reward.....	14	....	....	10	65.5	1	S g.	15.1
"	"	"	"	Thatcher.....	16	....	....	9.3	61.5	2	B.	14.1
"	"	"	"	Apex.....	13	....	....	9.3	62	1	S g.	14.6
"	"	"	"	Renown.....	15	....	....	9.7	63.5	1	S b.	14.0
No significant difference between varieties.												
CHARLES FREDERICK COYLE, PLEASANTDALE												
4A	14	5	B	Marquis.....	24	24	93	....	66	1	St.	....
"	"	"	"	Garnet.....	23	24	91	....	64.5	1	C.W.	12.1
"	"	"	"	Reward.....	21	23	94	....	66.5	1	S b.	14.9
"	"	"	"	Thatcher.....	28	25	91	....	65	1	Hd.	12.5
"	"	"	"	Apex.....	26	25	93	....	65.5	1	Hd.	11.8
"	"	"	"	Renown.....	21	23	93	....	66	1	Hd.	13.2
Significant difference between varieties 3.35 bushels.												
CLAYTON ALBERT ANGELL, ROSE VALLEY												
4A	14	6	A	Marquis.....	30	39	96	10	65.5	1	St. G.	9.9
"	"	"	"	Garnet.....	38	37	85	10	65	1	C.W.	11.2
"	"	"	"	Reward.....	33	38	88	10	66.5	1	Hd.	10.9
"	"	"	"	Thatcher.....	39	36	86	10	65	1	S b.	11.6
"	"	"	"	Apex.....	35	33	93	10	65.5	1	St.	10.0
"	"	"	"	Renown.....	37	37	90	10	66	1	St. S g.	10.7
No significant difference between varieties.												
JOHN WEBER, McKAGUE												
4A	14	6	B	Marquis.....	8	21	96	7.7	59	3	Sh. G.	16.9
"	"	"	"	Garnet.....	14	22	87	8	59	2	C.W.	16.4
"	"	"	"	Reward.....	11	22	88	8	61	2	Sh. G.	17.4
"	"	"	"	Thatcher.....	11	22	91	8	57	3	Sh. B.	16.9
"	"	"	"	Apex.....	9	22	91	8	58	3	Sh. G.	17.0
"	"	"	"	Renown.....	9	22	90	8	57.5	3	B. Sh.	16.4
Significant difference between varieties 1.48 bushels.												

Wheat Pool District 14—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
ARCHIE TAYLOR Groat, ETHELTON												
3D	14	7	A	Marquis.....	18	26	....	10	59	2	Sh.	19.3
"	"	"	"	Garnet.....	20	28	....	10	58.5	2	C.W.	18.1
"	"	"	"	Reward.....	19	27	....	10	61.5	1	S g.	19.9
"	"	"	"	Thatcher.....	18	28	....	9	57.5	3	Sh.	20.1
"	"	"	"	Apex.....	19	25	....	7	59	2	Sh.	19.3
"	"	"	"	Renown.....	18	26	....	9	58	2	Sh.	18.9

No significant difference between varieties.

JAMES EDGAR SMYIE, STAR CITY												
3D	14	7	B	Marquis.....	28	33	95	10	64	1	Hd.	13.5
"	"	"	"	Garnet.....	29	29	87	10	63	1	C.W.	13.9
"	"	"	"	Reward.....	24	29	87	10	66.5	1	Hd.	15.2
"	"	"	"	Thatcher.....	28	29	91	10	64	1	Hd.	14.2
"	"	"	"	Apex.....	28	29	95	10	63.5	1	Hd.	13.2
"	"	"	"	Renown.....	29	31	91	10	65	1	Hd.	13.9

No significant difference between varieties.

SELMAN W. BOYD, MELFORT												
3D	14	7	C	Marquis.....	9	20	91	10	61	1	Sh. S g.	19.0
"	"	"	"	Garnet.....	8	24	86	10	55.5	4	Sh.	21.0
"	"	"	"	Reward.....	9	26	88	10	60.5	2	Sh. G.	20.7
"	"	"	"	Thatcher.....	8	24	88	9	57	3	Sh.	20.6
"	"	"	"	Apex.....	7	20	92	9	60.5	1	Sh.	20.2
"	"	"	"	Renown.....	7	24	89	10	59.5	2	Sh. G.	19.8

No significant difference between varieties.

KENNETH ALAN HARRIS, STAR CITY												
3D	14	7	D	Marquis.....	31	35	....	9.7	66	1	St. S g.	10.9
"	"	"	"	Garnet.....	32	36	....	8.7	65	1	C.W.	11.2
"	"	"	"	Reward.....	32	35	....	8.7	67	1	S g.	12.3
"	"	"	"	Thatcher.....	43	35	....	10	65	1	S b.	11.2
"	"	"	"	Apex.....	36	34	....	9.3	66	1	S g.	11.1
"	"	"	"	Renown.....	33	36	....	9.3	65	1	S g.	11.7

Significant difference between varieties 5.10 bushels.

RONALD STEWART PEARCE, TISDALE												
3D	14	8	A	Marquis.....	....	....	....	8.7	....	"	C.W.	....
"	"	"	"	Garnet.....	25	....	....	8.3	63	1	C.W.	17.1
"	"	"	"	Reward.....	29	....	....	8	65	1	S g.	18.3
"	"	"	"	Thatcher.....	28	....	....	8.7	65	1	S b.	17.3
"	"	"	"	Apex.....	31	....	....	9	65.5	1	S b.	16.6
"	"	"	"	Renown.....	21	....	....	8.3	64	1	S g.	17.8

Significant difference between varieties—(Samples incomplete).

DOUGALD H. FOY, BJORKDALE												
4A	14	8	C	Marquis.....	40	40	....	10	64	1	S g.	15.0
"	"	"	"	Garnet.....	39	36	....	9	65	1	C.W.	14.1
"	"	"	"	Reward.....	35	40	....	10	66	1	G.	16.1
"	"	"	"	Thatcher.....	52	40	....	10	65	1	S b.	14.1
"	"	"	"	Apex.....	44	36	....	10	65	1	G.	14.5
"	"	"	"	Renown.....	43	36	....	10	65	1	S g.	14.6

No significant difference between varieties.

EDWARD DOUGLAS ALLEN, NEW OSGOOD												
3D	14	9	A	Marquis.....	11	16	92	10	65	1	Hd.	13.4
"	"	"	"	Garnet.....	11	18	82	10	63	1	C.W.	13.0
"	"	"	"	Reward.....	11	17	86	10	66	1	Hd.	14.1
"	"	"	"	Thatcher.....	12	17	88	10	64	1	Hd.	14.0
"	"	"	"	Apex.....	10	15	88	10	65.5	1	Hd.	13.6
"	"	"	"	Renown.....	10	16	86	10	65	1	Hd.	13.6

No significant difference between varieties.

HAROLD ERNEST WALL, PONTRILAS												
3D	14	10	A	Marquis.....	32	31	95	8.3	66	1	Hd.	15.1
"	"	"	"	Garnet.....	33	28	84	8	64.5	1	C.W.	15.9
"	"	"	"	Reward.....	26	27	86	8.3	66	1	S g.	17.6
"	"	"	"	Thatcher.....	33	29	88	8	65	1	S b.	16.3
"	"	"	"	Apex.....	37	30	87	8.7	65.5	1	S g. B p.	14.7
"	"	"	"	Renown.....	27	31	88	6	65	1	S b.	16.5

Significant difference between varieties 5.85 bushels.

MERVYN A. RUSK, WHITE FOX												
3D	14	10	B	Marquis.....	27	39	....	8.7	64.5	1	Hd.	14.9
"	"	"	"	Garnet.....	42	37	....	8	63.5	1	C.W.	14.8
"	"	"	"	Reward.....	40	37	....	8.7	66.5	1	S g.	16.9
"	"	"	"	Thatcher.....	41	37	....	8.7	64	1	Hd.	15.3
"	"	"	"	Apex.....	37	39	....	9.3	64	1	Hd.	15.1
"	"	"	"	Renown.....	32	41	....	9	65	1	Hd.	16.1

Significant difference between varieties—(Samples incomplete).

Wheat Pool District 14—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
JAMES NORMAN BAYLISS, CODETTE												
3D	14	10	C	Marquis.....	13	17	86	9	63	2	B.	16.0
"	"	"	"	Garnet.....	18	18	80	8.7	62	2 C.W.	B.	16.3
"	"	"	"	Reward.....	15	16	81	9.3	64	2	B.	17.8
"	"	"	"	Thatcher.....	12	14	83	9	62	2	B.	17.4
"	"	"	"	Apex.....	15	19	82	9	62	2	B.	16.7
"	"	"	"	Renown.....	11	18	82	9	63	2	B.	17.1

Significant difference between varieties 3.54 bushels.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

3C 14 6 C	Earl Sylvester	Nomeland, Nora.	3D 14 8 B	Edwin Vincent	Wright, Tisdale.
3D 14 9 B	Elton McDonald,	Armley.			

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 15

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
WARREN ALEXANDER REID, CRYSTAL SPRINGS												
3D	15	1	A	Marquis.....	21	....	....	....	65	1	S g.	16.5
"	"	"	"	Garnet.....	16	....	....	....	63	1 C.W.	"	16.5
"	"	"	"	Reward.....	20	....	....	....	64.5	1	S g.	19.0
"	"	"	"	Thatcher.....	21	....	....	....	63.5	1	S b.	17.8
"	"	"	"	Apex.....	13	....	....	....	64	1	S g.	18.4
"	"	"	"	Renown.....	18	....	....	....	63.5	1	S g.	17.5

No significant difference between varieties.

PHILLIP PARSON, RED DEER HILL

3E	15	2	A	Marquis.....	6	....	....	....	63.5	1	S g.	16.8
"	"	"	"	Garnet.....	1	....	....	....	*	2 C.W.	Sh.	17.6
"	"	"	"	Reward.....	5	....	....	....	63	1	S g.	17.8
"	"	"	"	Thatcher.....	7	....	....	....	61	1	S b.	16.9
"	"	"	"	Apex.....	7	....	....	....	62	1	S g.	17.3
"	"	"	"	Renown.....	8	....	....	....	63	1	S g.	17.8

Significant difference between varieties 3.16 bushels.

FRANCOIS BLANCHARD, JR., DUCK LAKE

3E	15	3	A	Marquis.....	3	....	....	10	62.5	1	S b. G.	17.3
"	"	"	"	Garnet.....	1	....	....	10	*	3	B. Sh.	19.6
"	"	"	"	Reward.....	1	....	....	10	*	2	B. Sh.	19.8
"	"	"	"	Thatcher.....	2	....	....	10	*	2	B. Sh.	18.2
"	"	"	"	Apex.....	3	....	....	10	*	2	S g.	17.3
"	"	"	"	Renown.....	3	....	....	10	*	2	S b. G.	17.5

Significant difference between varieties .47 bushels.

GEORGE MITCHELL, BUTTERBY

3E	15	3	B	Marquis.....	5	14	....	....	60	3	G. Sh.	17.0
"	"	"	"	Garnet.....	4	16	....	....	56	4	B. Sh.	17.4
"	"	"	"	Reward.....	4	14	....	....	59	3	B. Sh. G.	18.1
"	"	"	"	Thatcher.....	6	14	....	....	57.5	3	B. Sh.	17.6
"	"	"	"	Apex.....	5	14	....	....	58	3	B. Sh. G.	17.1
"	"	"	"	Renown.....	5	16	....	....	60	3	Sh. G.	17.4

Significant difference between varieties .75 bushels.

ROBERT ARTHUR RIEKMAN, ROSTHERN

3E	15	4	B	Marquis.....	2	11	98	10	*	3	B. G.	18.1
"	"	"	"	Garnet.....	1	12	96	10	*	3	Sh. G.	19.0
"	"	"	"	Reward.....	3	13	98	10	60	3	B. G.	18.9
"	"	"	"	Thatcher.....	3	11	98	10	*	3	B.	17.9
"	"	"	"	Apex.....	2	10	98	10	*	3	B. G.	17.5
"	"	"	"	Renown.....	4	11	98	10	59.5	3	B. G.	18.4

No significant difference between varieties.

MERVIN LESLIE MADSEN, AVEBURY

3E	15	6	A	Marquis.....	....	30	91	6.7	....	....	....	....
"	"	"	"	Garnet.....	....	30	83	6.3	....	....	....	....
"	"	"	"	Reward.....	....	30	85	7.3	....	....	....	....
"	"	"	"	Thatcher.....	....	28	87	8	....	....	....	....
"	"	"	"	Apex.....	....	28	90	7.7	....	....	....	....
"	"	"	"	Renown.....	....	29	88	7.3	....	....	....	....

Significant difference between varieties—(No samples received).

* Insufficient to weigh.

Wheat Pool District 15—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
ROBERT VICTOR FINES, MONT NEBO												
3E	15	7	A	Marquis.....	16	23	91	9	64	1	G.	14.3
"	"	"	"	Garnet.....	19	22	83	8.2	63	1	C.W.	14.7
"	"	"	"	Reward.....	15	21	84	8	65.5	1	S g.	15.6
"	"	"	"	Thatcher.....	16	22	92	8.3	63	1	S b.	15.6
"	"	"	"	Apex.....	19	23	94	9	64	1	S g.	15.4
"	"	"	"	Renown.....	16	22	86	8.8	65	1	S g.	15.0

No significant difference between varieties.

DOUGLAS KELL, CANWOOD

3E	15	7	B	Marquis.....	18	28	...	9.7	65	2	G. P. Sh.	15.5
"	"	"	"	Garnet.....	10	29	97	9	64	1	C.W.	14.9
"	"	"	"	Reward.....	15	29	91	9.3	66	2	G.	17.0
"	"	"	"	Thatcher.....	23	26	98	9.3	64.5	2	G. B.	15.9
"	"	"	"	Apex.....	23	28	97	9.7	65	2	G.	15.3
"	"	"	"	Renown.....	19	29	96	10	64	2	G.	16.1

Significant difference between varieties 5.14 bushels.

WILFRED TERENCE MARTIN, HOLBEIN

3E	15	8	B	Marquis.....	13	19	86	10	63	1	S b.	14.4
"	"	"	"	Garnet.....	13	21	87	9	61	1	C.W.	15.2
"	"	"	"	Reward.....	11	19	87	9.3	64	1	S g.	15.6
"	"	"	"	Thatcher.....	12	17	86	9.7	62	2	S b.	15.5
"	"	"	"	Apex.....	12	18	87	10	62.5	1	S b.	15.3
"	"	"	"	Renown.....	15	22	87	9.3	63.5	1	Sh. G.	14.6

No significant difference between varieties.

DAVID SINCLAIR MITCHELL, WHITE STAR

3E	15	9	A	Marquis.....	25	25	92	10	65	1	Hd.	15.2
"	"	"	"	Garnet.....	24	22	90	10	65	1	C.W.	15.3
"	"	"	"	Reward.....	21	27	92	9	66	1	Hd.	17.4
"	"	"	"	Thatcher.....	28	24	92	10	65	1	Hd.	14.9
"	"	"	"	Apex.....	23	24	92	10	66	1	Hd.	14.9
"	"	"	"	Renown.....	27	29	93	9.7	66	1	Hd.	15.5

No significant difference between varieties.

THEODORE PACZAY, PADDOCKWOOD

3D	15	9	B	Marquis.....	31	33	119	5	66	1	Hd.	13.6
"	"	"	"	Garnet.....	33	32	116	6	63.5	1	C.W.	14.2
"	"	"	"	Reward.....	28	32	116	6.6	66	1	Hd.	16.3
"	"	"	"	Thatcher.....	36	29	118	8	64	1	Hd.	14.3
"	"	"	"	Apex.....	34	29	118	6	65.5	1	Hd.	13.9
"	"	"	"	Renown.....	31	32	118	5	64.5	1	Hd.	14.9

No significant difference between varieties.

JOHN ALAN PATERSON, KINISTINO

3D	15	10	A	Marquis.....	14	...	...	10	64	1	Hd.	14.6
"	"	"	"	Garnet.....	15	...	...	10	62	1	C.W.	15.6
"	"	"	"	Reward.....	12	...	...	10	65.5	1	Hd.	16.1
"	"	"	"	Thatcher.....	18	...	...	10	63.5	1	Hd.	15.5
"	"	"	"	Apex.....	15	...	...	10	64	1	Hd.	14.4
"	"	"	"	Renown.....	13	...	...	10	64	1	Hd.	15.4

No significant difference between varieties.

THOMAS TUBMAN, BROOKSBY

3D	15	10	B	Marquis.....	25	30	92	10	63.5	1	Hd.	14.4
"	"	"	"	Garnet.....	26	27	84	10	62	1	C.W.	14.4
"	"	"	"	Reward.....	25	28	92	10	65	1	S g.	15.8
"	"	"	"	Thatcher.....	31	28	92	10	63	1	Hd.	14.5
"	"	"	"	Apex.....	29	28	88	10	62.5	1	Hd.	14.3
"	"	"	"	Renown.....	21	28	92	10	63	1	S g.	15.2

No significant difference between varieties.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

3E 15 1	B	William Douglas Stevenson, Birch Hills.	3E 15 2	B	Arden Gilbertson, Domremy.
3E 15 4	A	Edward Lewis Tadei, Rosthern.	3E 15 5	A	Robert Brown, Leask.
3E 15 5	B	Charles Edward Leask, Marcellin.	4B 15 6	B	Robert Edgar Wood, Ladder Valley.
3E 15 8	A	Frederick Harold Pugh, Wild Rose.			

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

WHEAT POOL DISTRICT 16

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
EDWARD P. HUDEK, HAFORD												
3E	16	2	A	Marquis.....	9	15	87	10	63.5	1	S g.	15.8
"	"	"	"	Garnet.....	6	15	82	8.8	60	2 C.W.	Sh. G.	18.1
"	"	"	"	Reward.....	7	15	81	9.3	63.5	1	S g.	17.6
"	"	"	"	Thatcher.....	9	15	84	9.5	61.5	1	B. Sh.	17.7
"	"	"	"	Apex.....	6	15	87	10	63	1	Sh. G.	16.8
"	"	"	"	Renown.....	7	15	81	9.5	62.5	1	Sh. G.	17.5
No significant difference between varieties.												
THOMAS WYATT, NORTH BATTLEFORD												
3E	16	3	B	Marquis.....	2	14	....	10	*	No. 5	Sh. V g.	19.9
"	"	"	"	Garnet.....	3	16	....	9.3	54	No. 5	Sh. V g.	21.6
"	"	"	"	Reward.....	4	16	....	10	55.5	4	Sh. V g.	21.5
"	"	"	"	Thatcher.....	4	14	....	10	54	No. 5	Sh.	21.2
"	"	"	"	Apex.....	3	14	....	10	*	No. 5	V g.	21.0
"	"	"	"	Renown.....	3	16	....	10	*	No. 5	V g.	20.7
No significant difference between varieties.												
MISS IRENE GRANT, EDAM												
3E	16	4	B	Marquis.....	11	....	....	....	64	3	V g.	16.6
"	"	"	"	Garnet.....	10	....	....	....	60	2 C.W.	Sh. G.	16.5
"	"	"	"	Reward.....	7	....	....	....	63	2	Sh. G.	17.6
"	"	"	"	Thatcher.....	12	....	....	....	63	2	G.	16.3
"	"	"	"	Apex.....	9	....	....	....	63	2	G.	16.2
"	"	"	"	Renown.....	10	....	....	....	62	2	G.	16.7
No significant difference between varieties.												
GILBERT HENRY WESSON, MAIDSTONE												
3E	16	5	A	Marquis.....	21	....	....	10	64.5	2	G.	14.5
"	"	"	"	Garnet.....	18	....	....	10	64	1 C.W.	"	16.1
"	"	"	"	Reward.....	17	....	....	10	66	1	S g.	17.5
"	"	"	"	Thatcher.....	19	....	....	10	64.5	2	G.	16.0
"	"	"	"	Apex.....	16	....	....	10	64	2	G.	15.9
"	"	"	"	Renown.....	14	....	....	10	64	2	G.	16.9
No significant difference between varieties.												
JOHN ANGUS CURRIE, BRESAYLOR												
3E	16	5	B	Marquis.....	5	13	....	9	61.5	3	B. G.	16.7
"	"	"	"	Garnet.....	7	15	80	9	62	2 C.W.	G. Sh.	17.2
"	"	"	"	Reward.....	8	15	82	8.3	65	1	G.	17.8
"	"	"	"	Thatcher.....	9	14	82	10	62.5	3	B. G.	16.4
"	"	"	"	Apex.....	7	14	....	9.3	62	3	B. G.	16.5
"	"	"	"	Renown.....	8	15	82	9.3	62.5	3	B. G.	17.5
No significant difference between varieties.												
JAMES ALFRED RICHARDS, LASHBURN												
3E	16	6	A	Marquis.....	25	23	109	9.7	66	2	G.	15.2
"	"	"	"	Garnet.....	26	22	107	9.2	64	1 C.W.	"	15.0
"	"	"	"	Reward.....	21	22	109	7	66.5	1	G.	16.5
"	"	"	"	Thatcher.....	29	22	109	9	64.5	2	S b. G.	15.6
"	"	"	"	Apex.....	25	22	109	9.5	65	3	G. B p.	15.5
"	"	"	"	Renown.....	23	23	107	9	65	2	S g.	16.1
Significant difference between varieties 3.92 bushels.												
FRANK JOHN SUTTON, MARSHALL												
3E	16	6	B	Marquis.....	19	22	114	9.3	63	2	G.	15.5
"	"	"	"	Garnet.....	16	24	110	9.3	64	1 C.W.	"	15.1
"	"	"	"	Reward.....	14	26	114	9.7	64	2	G.	17.4
"	"	"	"	Thatcher.....	21	23	114	9.3	63.5	2	B. G.	15.7
"	"	"	"	Apex.....	16	20	114	9	63	2	G.	15.2
"	"	"	"	Renown.....	16	24	114	9.3	64	2	G.	16.5
No significant difference between varieties.												
WESLEY SIMPSON, PARADISE HILL												
3E	16	7	B	Marquis.....	11	18	....	9	64	2	G.	16.3
"	"	"	"	Garnet.....	13	19	....	10	64	1 C.W.	"	16.3
"	"	"	"	Reward.....	10	18	....	9.7	65	2	G.	18.1
"	"	"	"	Thatcher.....	11	16	....	9.7	65	2	B. G.	16.4
"	"	"	"	Apex.....	11	17	....	9	64.5	2	S g. B p.	16.4
"	"	"	"	Renown.....	10	18	....	9.3	64.5	2	S g.	17.7
No significant difference between varieties.												
LLOYD GEORGE PROCTOR, MERVIN												
3E	16	8	A	Marquis.....	7	16	....	10	64	1	S g.	15.7
"	"	"	"	Garnet.....	8	18	....	9.3	62.5	1 C.W.	"	15.2
"	"	"	"	Reward.....	5	16	....	9.7	64	1	S g.	16.5
"	"	"	"	Thatcher.....	13	16	....	9.7	64	1	S g.	15.4
"	"	"	"	Apex.....	11	19	....	10	64	1	S g.	15.2
"	"	"	"	Renown.....	8	17	....	9.7	67	1	S g.	16.7
Significant difference between varieties 2.77 bushels.												

* Insufficient to weigh.

Wheat Pool District 16—Continued

Cereal variety zone	Dist.	Sub-dist.	Test designation	Varieties	Yield bus. per acre	Plant height in inches	Days seed-ing to ripe	Straw strength	Pounds per measured bushel	Commer-cial grades	Grading remarks	Protein content in per-centage
JAMES G. COCKBURN, TURTLEFORD												
3E	16	8	B	Marquis.....	8	....	....	9	58.5	No. 5	B. P. Sh. V g.	15.7
"	"	"	"	Garnet.....	7	....	....	6	60	4	B. G.	16.6
"	"	"	"	Reward.....	5	....	....	6.3	61	No. 5	B. V g.	18.9
"	"	"	"	Thatcher.....	13	....	....	8.3	59	No. 5	B. V g.	16.0
"	"	"	"	Apex.....	11	....	....	7.3	58	No. 5	B. V g.	16.0
"	"	"	"	Renown.....	12	....	....	7.3	59.5	No. 5	B. V g.	16.2

Significant difference between varieties 3.20 bushels.

JOHN HENRY McDONALD, EAST ANGLIA												
4B	16	9	A	Marquis.....	11	19	....	10	64	2	G.	15.8
"	"	"	"	Garnet.....	6	19	....	10	63	3	V g.	17.3
"	"	"	"	Reward.....	9	19	....	10	65	2	G.	18.8
"	"	"	"	Thatcher.....	10	21	....	10	63	2	B. S g.	16.2
"	"	"	"	Apex.....	7	19	....	10	63	2	B. S g.	16.7
"	"	"	"	Renown.....	10	22	....	10	64	3	G.	17.0

No significant difference between varieties.

ROBERT CHARLES SEYMOUR, FOUR CORNERS												
4B	16	9	C	Marquis.....	35	....	85	8.5	65.5	3	V g.	11.5
"	"	"	"	Garnet.....	39	....	84	8.3	66	3	V g.	11.7
"	"	"	"	Reward.....	30	....	83	8.3	67	2	G.	13.7
"	"	"	"	Thatcher.....	36	....	86	9	65.5	3	V g.	11.8
"	"	"	"	Apex.....	36	....	87	9	65	3	V g.	11.3
"	"	"	"	Renown.....	30	....	84	8	65.5	3	V g.	12.3

No significant difference between varieties.

JOHN UNRAU, MULLINGAR												
3E	16	10	A	Marquis.....	9	....	....	....	64.5	1	S g.	14.8
"	"	"	"	Garnet.....	7	....	....	....	60	2	C.W. B. Sh.	16.3
"	"	"	"	Reward.....	7	....	....	....	63	2	B. Sh.	16.9
"	"	"	"	Thatcher.....	9	....	....	....	61	2	B. Sh.	15.9
"	"	"	"	Apex.....	8	....	....	....	63	1	S g. Sh.	15.5
"	"	"	"	Renown.....	8	....	....	....	63	1	S b.	15.6

No significant difference between varieties.

THOMAS HAROLD LATUS, BAPAUME												
4B	16	10	B	Marquis.....	3	13	92	10	*	2	G.	15.3
"	"	"	"	Garnet.....	3	12	83	10	61	2	C.W. G.	16.2
"	"	"	"	Reward.....	3	11	81	10	*	2	G.	18.8
"	"	"	"	Thatcher.....	5	15	87	10	61.5	2	B. G.	16.3
"	"	"	"	Apex.....	3	15	89	10	*	2	G.	16.0
"	"	"	"	Renown.....	3	11	88	10	*	2	G.	17.1

No significant difference between varieties. * Insufficient to weigh.

Tests Discarded on Account of Severe Damage by Drought, Pests, Hail, or Other Causes

3E 16 1 A	Earl Walter McKellar, Radisson.	3E 16 1 B	Chester Lloyd Ferris, Fielding.
3E 16 2 B	Glenford Hilton Layman, Speers.	3E 16 3 A	Donald Wright Humphreys, Iffley.
3E 16 4 A	Clayton Edgelow, Cavalier.	3E 16 7 A	Norman I. Preece, Bolney.
4B 16 9 B	Ralph Young, East Anglia.		

Note.—The figures and letters before each name represent, in order, the Cereal Variety Zone, the District, Sub-District, and Test Designation.

Conclusions

Despite the severe climatic conditions which existed throughout the growing season, the 1937 wheat variety testing project amply justified the work expended upon it. In the foregoing pages it will be seen that only in those areas where abnormal weather conditions resulted in early and complete failures were the tests of no material value in so far as the results were concerned. Even in these cases, however, it fully demonstrated to the co-operators the method employed in making an accurate comparative test of varieties.

While the results which are embodied in this report show the differences in the different characteristics of the varieties used in the project, it cannot be too strongly stressed that the tests, in so far as the two new Canadian rust-resistant varieties, namely Apex and Renown, are concerned, represent the results of one year only when severe climatic conditions prevailed and the reactions of all varieties must be considered only in comparison to their known behaviour in a normal year.

During the coming season a similar variety testing project is again being sponsored by the Saskatchewan Wheat Pool and much of the data embodied in this report, representing the results during an abnormal year, are subject to their being sustained by the results of this year's tests when it is hoped that ample precipitation will be received and normal temperatures will prevail.

* * *

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